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ABSTRACT

For this joint effort among three Cabinet Agencies, studies by a variety of organizations were reviewed and 134 business leaders and 34 education leaders in many communities throughout the United States were interviewed to determine what businesses find lacking among new entrants into the labor force and what employers' work force needs will be in the future. In addition, seven employer/school forums were held across the country. Some of the findings were the following: (1) the workplace and the economy as well as job requirements are changing rapidly; (2) the basic skills gap between what business needs and the qualifications of entry-level workers is widening; (3) employers find the competencies of entry-level workers deficient in basic mathematics, reading, writing, and communications, as well as in problem solving and teamwork; (4) lack of these skills is costing American business money; (5) educators agree with business about the skills needed in the workplace but few educators acknowledge that the gaps are as severe as business indicates; (6) business must do a better job of anticipating future work force needs and communicating them to educators, parents, students, and the community; and (7) more cooperation between business and the educational community is needed. It is concluded that in order to close the skills gap, the quality of education must be improved, businesses must assist schools, and the community must be mobilized to ensure the best education for young people and a high quality work force for the nation. In addition to describing research findings, the report also contains descriptive profiles of three communities which are successfully closing the gap between workplace needs and workforce capabilities. (An annotated bibliography is appended, as are lists of forum participants and business persons and educators consulted.) (KC)

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Building A Quality Workforce

A Joint Initiative Of The

U.S. DEPARTMENT OF LABOR
U.S. DEPARTMENT OF EDUCATION
U.S. DEPARTMENT OF COMMERCE

CE050848

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BUILDING A QUALITY WORKFORCE

A Joint Initiative Of The

U.S. Department Of Labor
Ann McLaughlin, Secretary

U.S. Department Of Education
William J. Bennett, Secretary

U.S. Department Of Commerce
C. William Verity, Secretary

July 1988

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Acknowledgements

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Likewise, we would like to thank Dr. Sue E. Berryman, Director of the National Center on Education and Employment at Teachers College, Columbia University, for serving as an advisor on the report.

Within each of our Agencies, we would also like to thank the dedicated staff who contributed to this report: Roberts T. Jones, Acting Assistant Secretary of Labor, and Lloyd Feldman (U.S. Department of Labor), Edwin Dale (U.S. Department of Commerce) and Shannon Sorzano (U.S. Department of Education).

Preface

by Secretary of Labor, Ann McLaughlin

We are in the midst of one of the most extended periods of employment growth in our history. American businesses have created nearly 16 million jobs since 1982. This represents two and a half times as many new jobs as the other six major industrialized nations, combined.

The decisive factor in this extraordinary record of economic recovery and employment expansion has been the quality of the American workforce. Since the 1920s, the large majority of the nation's productivity improvements have been directly linked to improvements in the quality of our labor force. The quality of our future workers -- their skills, education, adaptability, and self-esteem -- will, in large part, determine whether we can maintain that momentum in the years ahead.

The school systems of America will play the pivotal role -- as they have in the past -- in determining whether or not our labor force will have the basic skills to meet the requirements of the jobs which will become available. These requirements are changing. The jobs created in the future will be more complex. They will demand better reading, writing, mathematical and reasoning skills. Over half the jobs created over the next ten years will require education beyond high school.

It is vital for all of us that our schools measure up to that challenge. However, there are indications that a skills gap already exists between the emerging job opportunities and the basic qualifications of young people graduating -- or in too many cases -- dropping out of our high schools.

Shortly after I joined the Cabinet, I met with Secretaries Bennett and Verity to review major issues of interest to our three Departments. The quality of our future workforce emerged as a problem of intense concern to each of the three broad national constituencies we represent: employers; the schools and the teaching profession; and the workers themselves.

This publication is intended to bring this problem into focus, by presenting the perspectives of the business and education communities. Not only do the expectations of employers exceed the qualifications of many of our young people, there is also a lack of agreement between business people and educators in their perceptions of the magnitude of the problem. However, there are communities, noted in this report, where employers and the school systems have moved aggressively to reach a common understanding of the problem and take decisive action.

It is our purpose, in this publication and the conference we convened in Washington in July, to focus public attention on the problem and, equally as important, to point the way to solutions which can be achieved, at the community level, when business and education join forces to strengthen our schools and help to build a quality workforce.

Ann McLaughlin
Secretary
U.S. Department of Labor

Preface

by Secretary of Commerce, C. William Verity

During our long and mostly successful history as an industrial nation, the United States has always been able to put together the ingredients for economic growth and an ever-higher standard of living. They include such elements as innovation, savings to finance investment in better capital equipment, and a labor force with enough knowledge and skills to match the gradually rising demands of the workplace.

Today we appear to be facing -- probably for the first time in our history -- a potential breakdown in one of the essential links in this chain. In brief, at a time when more and more jobs require at least basic proficiency in English comprehension and mathematics, our young entrants into the labor force are proving to be disturbingly deficient in these skills, not to mention knowledge in such areas as science, geography and foreign languages. As business people, we have always needed to worry about achieving higher productivity, various elements of our costs, raising capital, our problems with foreign competition and the directions of research and development. We still do, but now we have discovered we have a problem scarcely imagined a few decades ago -- the problem of hiring new entrants into the labor force who are capable of performing the work they are hired for.

Early this year my colleagues in the Cabinet, Secretaries McLaughlin and Bennett, and I discovered that we were all disturbed by this situation. We had all seen scattered evidence of the seriousness of the problem and felt we needed to know more. We also wanted to know more about the efforts being made at the local level around the country to try to do something about it, through cooperation between business and education. I am particularly impressed by the detailed accounts of business-education collaboration in three places -- Portland, Oregon; Cincinnati, Ohio; and Prince George's County, Maryland. These merit detailed study by business men and women everywhere who are troubled by the problem of an unprepared workforce.

The result of our joint concerns is this publication and the associated conference of leaders in various fields held in July 1988. We all know we cannot cure our educational deficiencies overnight and that one conference cannot make a revolution. But I do believe that the more the nation is aware of this once-hidden problem, the more likely we are to face up to it and eventually solve it.

The current boom in our exports shows that this nation is still fully able to compete in the world market. But we cannot be competitive for long without a quality workforce. The purpose of my Cabinet colleagues and myself in producing this publication is to drive home this point to all segments of our population -- parents as well as educators, students as well as business people. What is at stake is no less than our continued prosperity and rising standard of living.

C William Verity

C. William Verity
Secretary
U.S. Department of Commerce

Preface

by Secretary of Education, William J. Bennett

Nothing improves a child's chances for success in the workplace as much as a good education. But too many of today's children, particularly those coming from disadvantaged backgrounds, are not getting the education to which they are entitled.

Today's workplace more than ever demands that American youth have a solid background in math, in English, and in basic reasoning capabilities. The millions of unskilled and semi-skilled positions that once provided employment to Americans with limited education are disappearing. Continuous technological innovation and ever-increasing economic competition from abroad ensure that this trend will continue.

Five years ago, the publication of *A Nation at Risk* awakened the American people to the crisis we then faced in our schools. The response to that report was dramatic, widespread and encouraging. Yet we are still far from closing the gap between the needs of the workplace and the education our schools provide.

Fortunately, American business men and women are taking an increasing interest in the vital relationship between education and economic vitality. In many cities across the country, we are seeing the development of community partnerships that bring new resources to our schools and new commitment to our students. These partnerships can be a vehicle for improving school performance, for building civic literacy, and for creating a workforce prepared to adapt to changes in the workplace.

Discipline and hard work are essential to success in schools, and no less to schools that serve children at risk. We need to explode the myth that it is unfair to expect disadvantaged students to meet these high standards, as though they were incapable of success. They are capable but, all too often, they are unchallenged.

Schools should not give up on students by allowing them to drop out, or by letting them graduate without obtaining a substantial education. And as we hold our young people accountable for their performance, so should we hold our schools and communities accountable. We must be prepared to insist on fundamental reforms that will clear the way for real improvement.

Partnerships that lead to community-wide goal-setting can open a way to education reform. Community support for educational excellence, and community knowledge of what schools are doing and why, are essential for success. Support from all sectors of the community is key to raising the level of performance for all our students.

William J. Bennett
Secretary
U.S. Department of Education

Introduction

Our nation's economic strength and vitality, our productivity and international competitiveness, depend on our capacity to build and maintain a quality workforce. The foundation of a quality workforce rests with the ability of our nation's school systems to provide the basic reading, writing and mathematical skills as well as an appreciation for the work ethic, which our young people must possess to perform effectively in the workplace. While American education has made some undeniable progress in recent years, the message we have been hearing from the business community is that much remains to be done.

This publication represents a joint effort among three Cabinet Agencies, all working on one common agenda -- building a quality workforce to meet the needs of a new technological society. Our nation is experiencing a widening gap between workplace needs and workforce capabilities, and we need to address this mismatch between the needs of business and the skills of young people leaving our schools.

The research for this publication not only included a thorough review of studies by a variety of organizations but also a series of new consultations with business and education leaders in many communities, to find out what businesses find is lacking among the new entrants into the labor force coming out of the schools, and what employers' workforce needs will be in the future. We asked business, and we asked educators: What preparation will our young people need to be ready for today's and tomorrow's workplace? They must be able to read, but at what level? For what purposes? With what degree of comprehension? What types of materials?

The forums and consultations with area employers and officials of local school systems yielded new insights about the specific skills, competencies and worker attitudes that local business executives and educators think will be needed during the next two decades. Taken together with earlier studies, the research tells us that, as a nation, we are in the midst of tremendous change for our workforce and workplace and that those who are most responsible -- our educators and our business people -- have had little chance to step back to assess the implications of these changes or to respond to them. As a result, it is not surprising that strategies for joint action are few.

The information we have gathered represents the beginning of an effort to identify and articulate with greater specificity the needs of the business community for worker preparation, and to foster better understanding among business, education, and government leaders about the deficiencies in our entry

workers, and what must be done to overcome these deficiencies.

The first part of this report describes what we have learned from our research about entry workers' skills, business' needs, current and projected skills gaps, and how well education is responding to the challenge. It challenges education, business, government agencies, community groups and parents to do more to build a quality workforce.

The second part of this report contains descriptive profiles of several communities working on closing the gap between workplace needs and workforce capabilities. Their stories document the dedicated, creative business-education collaborations that have resulted in measurable improvements in education for their children.

We began this initiative with several objectives in mind:

- First, to identify **what business receives** -- the basic skills and workforce readiness of our nation's entry level workers.

- Second, to identify **what business needs** -- business requirements for entry workforce competencies now and in the future -- to increase productivity and remain competitive in the world economy.

- Third, to identify the **skill gaps** -- the deficiencies in our entry workforce. What do workers need to know and be able to do, to perform satisfactorily on the job? Has the notion of "entry level" been redefined, either explicitly or implicitly?

- Fourth, to explore **how education is responding** to this challenge -- their progress, performance, accountability, and their perceptions of how well they are doing in meeting business' demands.

- Fifth, to **challenge each sector** -- education and business -- to do more, individually and through productive, broad, community-wide partnerships, to improve the way we prepare our students to succeed as good workers and good citizens.

- Sixth, to **provide examples of successful community efforts** -- to stimulate greater interest and involvement in building a quality workforce.

Because education has the primary responsibility for initially preparing the entry level workforce, and business has the primary responsibility for building a quality workplace, we have placed special emphasis on these two sectors. However, the solution depends upon all sectors in our communities and all segments of our population.

How We Gathered This Information

The information in this report is based primarily on a series of one-on-one consultations with representatives from business and education, and community employer/school forums held throughout the nation during the Spring of 1988. This review was not designed to be an exhaustive study, but rather an attempt to assess the extent to which business people and educators are currently able to articulate business' current and anticipated entry level needs, and the deficiencies in our current workforce, so that we, as a nation, can determine future policy directions and actions needed to address these "gaps."

Nationwide, 134 business representatives were consulted, representing both small and large businesses (from some with as few as 16 employees, to several reporting over 10,000 workers), in urban and suburban settings, from a variety of industries, and at a variety of levels within their companies. Respondents represented banks, hospitals, hotels, insurance companies, utility companies, newspapers, telecommunications firms, a broad spectrum of manufacturing companies, and retail and wholesale distributors.

Profile of Businesses Consulted

By Position:

75% Personnel Managers
13% Plant or Operations Managers
12% Company Officers or Owners

By Type:

33% Manufacturing
30% Service
15% Finance, Investments, Insurance
11% Energy Producers/Providers
10% Communications

By Region:

21% Central
20% Midwest
20% Southeast
11% West
10% Atlantic
10% New England
7% Pacific Northwest

Percentages may not add to 100 due to rounding.

We held lengthy conversations with 34 educators, representing a cross section of education institutions, from kindergarten to college, including school districts and administrations, teacher unions, community and junior colleges, vocational schools or centers, technical colleges, and high schools.

Profile of Educators Consulted

By Position:

41% Directors of Curriculum or Employment Programs
21% Administrators
14% Vocational Directors
14% Deans of Community or Junior Colleges
7% Union Representatives

By Type of Institution:

48% District Representatives
17% Community and Junior Colleges
14% Vocational Schools or Centers
10% Technical Colleges
7% Unions
3% High Schools

Percentages may not add to 100 due to rounding.

In addition, seven employer/school forums were held across the country -- in St. Louis, Missouri; Portland, Oregon (two forums were convened there); Prince George's County, Maryland; Baltimore, Maryland; Pittsburgh, Pennsylvania; and Cincinnati, Ohio.

The consultations and forums were designed to assess: 1) current and future entry level worker needs; 2) current and future workforce capabilities; 3) the "gaps" or mismatches between the skills business needs versus the skills of the entry level workers actually available; 4) roles and responsibilities of business and educators in preparing the entry level workforce; and 5) the challenges involved in building collaborative relationships between business and education. These consultations and forums also provide a

range of viewpoints across both the business and education sectors. The employer/educator forums comprised approximately 8-10 individuals and were co-hosted by leaders within the business and school communities.

The purpose of the consultations and forums was to afford an opportunity for representatives of the business and education sectors to describe their needs, goals, and expectations. In some cases, we believed it would be more fruitful to have individual conversations, in which we could have a candid and open discussion about perceived needs and gaps. In other cases, we believed that a small focus group composed of active business and education representatives might generate some fruitful give-and-take among the diverse representatives, each presenting her or his view of the community's needs and possible approaches.

In conducting this assessment, no effort was made to draw a nationally representative sample of the business or education sectors. Therefore, observations and recommendations expressed by participants in this specific review cannot be generalized beyond the parameters of this report. However, there is no reason to doubt that they are representative of the nation at large. This report documents our findings, suggests some strategies, and offers new insights into the gaps between workplace needs and workforce capabilities. A complete list of those consulted is included in the Appendix.

Complementing these consultations, a literature review was conducted of what is known about current and future economic and labor force trends, what works in American education today, and what reforms are still needed.

Summary of Principal Findings and Conclusions

The findings and conclusions presented in this report provide a challenge not only for business and education, but for government and all sectors at the national, state and local levels. One challenge is to develop a new or at least common vocabulary to ensure that business and education understand each other when they speak of deficiencies in basic or core skills. Nevertheless, with the vocabulary at hand, following are highlights of our research findings and our conclusions based on what we have learned:

Findings

1. The economy and the workplace are changing rapidly, and the pace of change is accelerating.

2. The jobs themselves are changing in content and skill requirements, regardless of type or size of business.

3. The "basic skills gap" between what business needs and the qualifications of the entry level workers available to business is widening.

4. Employers are practically unanimous in their concern that competencies of entry level workers are deficient. These include the basic skills of reading, writing, mathematics and communication. Deficiencies were also found in such abilities as problem solving, teamwork, initiative, and adaptability.

5. These skills deficiencies in the workplace are costing American business monetarily, through waste, lost productivity, increased remediation costs, reduced product quality, and ultimately a loss in competitiveness.

6. Educators agree with business about the overall goals of education, and about the skills needed in the workplace. However, the majority of educators maintain that their graduates are well prepared for entry level positions, and only a few educators acknowledge that the gaps are as severe as business indicates.

7. Educators may not be translating their understanding of business' needs into what happens in the classroom.

8. Business must do a better job of anticipating future workforce needs, and communicating these needs to educators, to parents, to students, and to other community resources that can help address these needs.

9. Both business and education stress the need to develop mechanisms to reduce the isolation of their worlds in order to improve students' preparation for the workplace and for responsible adulthood.

10. While education reform efforts have brought undeniable progress, many experts conclude that the non-college bound and dropouts have been least affected.

11. Aggressive action may be needed by business and education to learn from each other and to change the way education is provided to ensure a quality workforce and a productive nation.

Conclusions

In order to close the skills gap, we need to:
1) Improve the quality of education for our nation's youth through fundamental education reforms in our nation's schools;
2) Mobilize businesses to assist schools in ways that capitalize on their comparative strengths and advantages; and
3) Mobilize the community -- all sectors -- to integrate efforts to ensure a quality education for our young people and a quality workforce for our nation. The final section of this report provides a detailed account of collaboration by business and education in several communities.

Strengthen Our Educational System

Much has been written and published about education reform, and this is not the place to explore that subject in depth. However, it is worth noting that educators can improve their processes and their products by learning from successful businesses and seeking their help:

1. **Increase accountability.** Just as business must set and meet high standards for the quality of its products, so must the schools through rigorous performance standards. Also, as business has decentralized authority and responsibility, schools must move toward school-based management and accountability.

2. **Strengthen the content of the curriculum and improve its delivery.** Schools must concentrate on excellence in the basic skills to ensure that young people have the foundation they need for lifelong learning and adapting to change. Just as business has had to adapt its methods and technology from mass production to more flexible

production to remain competitive, schools must also ensure that their teaching methods will address students' individualized needs and prepare all young people to be competent and responsible workers and citizens. Schools must find ways to make the basics relate better to the workplace.

3. **Recruit and reward good teachers and principals.** Just as business must be highly competitive in recruiting and retaining quality workers, so must the schools, through creative recruitment and retention efforts, performance-based pay plans, and other incentives.

4. **Improve educational opportunities and performance of the disadvantaged.** There is a direct link between a quality education and a quality workforce. Therefore, business and education must develop partnerships which invest in human capital just as business invests in plants and equipment. Special efforts are needed to target partnerships to assist the severely "at risk" including dropouts and the dropout-prone, and to intervene earlier. Demographics already tell us that a much greater proportion of future labor force entrants will be women, blacks, Hispanics, and immigrants. Only 15 percent of the new entrants to the labor force during the balance of this century will be white males.

5. **Increase competitiveness.** Just as individual businesses must respond to the market with increased flexibility and increased ability to identify and seize their market niche, so must the schools, through parent and student choice. Just as business must be concerned with image, perceptions, marketing and packaging their products, so must the schools ensure that their communities are well-informed about their performance and their results.

Expand Business Involvement

Business must articulate its human resource needs with greater specificity and precision, to help educators meet the current and future needs of employers. Business should expand its involvement and investment in our education system beyond symbolic efforts in ways that improve educational effectiveness and efficiency. Business should participate actively in policy, educational improvement, and management activities.

1. **Take the initiative to broaden the base of political support/ advocacy for the schools.** Only a small proportion of our cities' families have school age children. Schools need the involvement and critical assessment of the entire community (families, churches, volunteer organizations, community based organizations, government, business and elected officials). Business has leverage to improve the quality of education, by serving on school boards, either elected or appointed, or on advisory councils to Superintendents and principals, or working with elected officials, unions, and other community institutions such as universities and community colleges. If business makes the case that the community's economic and employment future is at stake, communities will listen.

2. **Develop community-wide collaborative efforts that increase communication and decrease the**

isolation of the education and the business communities. This can be accomplished by bringing education to business (i.e., providing basic skills training in the workplace, or providing teachers opportunities to work in business settings). This can also be accomplished by bringing a clearer sense of workforce expectations into the schools (vitalizing the schools through awareness that good jobs demand literacy and other basic competencies, and through expansion of initiatives to enrich the curricula young people are taught). Business can help in fostering successful transitions to work and to higher education.

3. **Undertake initiatives that assist schools in good management practices.** Promote decentralization and autonomy (school-based management), accountability and performance standards, professional training and development, merit pay, application of new technology, and other activities which successful businesses must employ if they are to remain competitive.

4. **Work to improve business' labor force planning for the short- and long-term**, both to enable firms to attract, select, and retain a quality labor force, and to provide guidance to the schools. Business needs to become more intelligent buyers, users, and developers of their labor pool to improve their own and the nation's productivity and ability to compete.

Building a Quality Workforce

The Changing Economy– The Changing Workplace

The economy and the workplace are changing rapidly, and the pace of change is accelerating.

> *"We must confront the need to boost the skills of American workers, maximize the potential of all our citizens, and adjust to the rapid change transforming the traditional workplace of Americans. We are headed for a significant -- and expanding, and expensive -- skills gap. This gap must be narrowed."*
>
> Ann McLaughlin
> Secretary of Labor

Experts both in and out of government agree that the competitive global marketplace, increased domestic competition due to deregulation, the pace of technology development, shorter product life cycles, and new flexible production processes all require more adaptable, more highly educated entry workers in order for our country to remain competitive.

> *"On this, the fifth anniversary of the report,* A Nation At Risk, *we are still perilously far from closing the gaps between what we need in the workplace, and what our schools are turning out."*
>
> William J. Bennett
> Secretary of Education

According to the Commerce Department, approximately 90 percent of all scientific knowledge has been generated in the last 30 years. In the next 10 to 15 years, this pool of knowledge will double again. "Change is accelerating at a dizzying pace," says Mellon Bank President and Chief Executive Officer David Barnes. "Mellon must upgrade or replace its mainframe computer on average every 18 months."

The accelerating pace of change has enormous implications for the workplaces of the future and for our entry level workers. It is clear that labor market developments over the remainder of this century will demand a flexible and adaptable workforce, able to shift rapidly as foreign competition and technology

eliminate some jobs while creating others. According to David Kearns, CEO of Xerox, "Future jobs will be restructured about every seven years and work and learning will be inseparable."

> *"Technology, especially computer-related technology, is increasing the role of the worker due to the increased interdependence of one job to another and the trend toward 'knowing' more than one job. Perhaps even more important, product quality rests largely in their hands rather than in the hands of their employers and managers."*
>
> C. William Verity
> Secretary of Commerce

The Commerce Department reinforces the importance of the impact of global competitiveness: "The pace of technology development now is so great that life cycles for electronics products and processes already have collapsed to three to five years, and rarely will exceed five to ten years in most other industries. As a result, any set of skills also can be obsolescent in five to ten years. Continuous re-skilling must be a top national priority."

The jobs themselves are changing in content and skill requirements, regardless of type or size of business.

According to the Bureau of Labor Statistics, more than half of all new jobs created between 1984-2000 will require some education beyond high school, and almost a third will be filled by college graduates. Today, only 22 percent of all occupations require a college degree.

The consultations with business confirmed the worklife realities of these statistical data. **The large majority of employers consulted contend that the complex and changing marketplace will continually heighten the need for a more highly qualified entry level labor force.** These future workers will be required to work within more complicated work environments while performing multiple and more intricate tasks.

Our findings are consistent with the results of a study by Louis Harris and Associates, in which 81 percent of the American people asserted that "how well the United States educates its labor force to new skill levels will make a major difference in whether or not this country maintains a leading economic position in the world."

> **Item:** *An April 11, 1988* Fortune Magazine *article, "Tomorrow's Jobs: Plentiful, but..." recounts that Tektronix, an Oregon based manufacturer of electronic equipment, tried to shift its traditional assembly line workforce to a flexible manufacturing system four years ago. The company discovered that 20 percent of its production workers lacked rudimentary skills needed for the transition. Tektronix is solving its problem by contracting with nearby Portland Community College to run a remedial on-site program in basic math and English for its many non-English speaking assemblers. Along the way, Tektronix added courses to enhance such skills as team building, negotiating, and effective time management.*

While the name of a job may remain the same, it may change dramatically in content and skill requirements. Dr. Sue

E. Berryman, Director of the National Center on Education and Employment, cites examples such as insurance claims adjusters and bank clerks. "In the insurance industry, computerization has caused five jobs to be folded into one, known as a claim adjuster. The job occupant is less an order taker than an advisory analyst. He or she has to have good communication skills and be able to help diagnose the customer's needs through an analytic series of questions and answers. The person needs less specific and splintered knowledge and more systematic and abstract knowledge -- the ability to understand multiple arrays of information, the rules governing them, and the relationships between arrays. He or she also needs to be able to frame answers to less standardized requests. Insurance companies used to hire high school dropouts or graduates for the five jobs. They now hire individuals with at least two years of college for the restructured claims adjuster jobs."

Thus, bank clerks and insurance claims adjusters may have the same titles they had many years ago, but the jobs are completely revamped, requiring less rote activity, dealing with less standardized requests, and demanding more ability to analyze problems, work with excessive or incomplete information, ask pertinent questions, identify sources of information, and penetrate poor documentation.

Evidence of these changes surrounds us daily. Even Federal Express couriers are no longer simply messengers, but must be able to work with state-of-the-art technology, which requires higher level basic skills. A recent NBC Nightly News Broadcast entitled "Defective Students" noted the changes in jobs as basic as couriers: "Not long ago, it didn't take much skill to be a delivery person. A high school dropout could do it. But now, the Federal Express Courier job includes new technology, a computerized tracking system and demands a person capable of running it." Jobs for high school dropouts or graduates without sufficient basic skills are virtually disappearing, notwithstanding the rapid expansion of the service sector.

> **Item:** *A Business Council for Effective Literacy* Newsletter *(April 1988) states: Today the role of reading in the workplace is a much more complicated matter. Profound changes in the structure of the workplace and in the nature of jobs now makes reading, writing and other communications skills vital to the performance of even entry level jobs. Research done at Indiana University (by Larry Mikulecky) has found that some 70 percent of the reading material in a cross section of jobs nationally is now between 9th grade and 12th grade difficulty (some 15 percent is even higher) -- and it is likely that the job and social requirements for literacy will increase even more in the years ahead. The trouble is that massive numbers of present and future workers have only minimal or marginal proficiency in the basic skills."*

These changes in jobs are evident in independent small businesses too, which employ about one-half of the nation's private sector labor force, according to the 1986 Report to the President on *The State of Small Business.* In a November 1987 Report, "Small Business in the Year 2000," the U.S. Small Business Administration notes that technology is having a great impact on small businesses. "Business investments in computers will more than double between

1984 and 1995. Forty percent of small businesses used computers in 1985." Small businesses consulted also indicated the need for their employees to be more versatile, as they, too, are experiencing the impact of new technology, increased computerization, and increased competition.

In their book, *Winning the Brain Race*, David Kearns, Chief Executive Officer of Xerox, and Denis Doyle, Senior Research Fellow, Hudson Institute, sum it up: "The simple truth is that we can't have a world class economy without a world class workforce, from senior scientists to stockroom clerks. And we cannot have a world class workforce without world class schools."

In his 1987 State of the Union Address, President Reagan talked about meeting the competitive challenge: "The quest for excellence into the twenty-first century begins in the schoolroom, but we must go next to the workplace. More than 20 million new jobs will be created before the new century unfolds and by then our economy should be able to provide a job for everyone who wants to work. We must enable our workers to adapt to the rapidly changing nature of the workplace...."

It is important to examine the skills our current entry level workers bring to the jobs of today, in order to determine how far we must progress to have workers prepared for the jobs of tomorrow.

Business' Challenge to Education -- The Skills Gap

The basic skills gap between what business needs, and the qualifications of the entry level workers available to business, is widening.

The pervasive themes emerging from the series of interviews and forums held throughout the country, as well as earlier studies, reiterate what is known about the quality of this country's current entry labor force and future entry labor force needs.

Two-thirds of employers consulted assessed the current pool of entry level applicants as being insufficiently prepared in basic skills.

More and more businesses are citing difficulties in finding qualified applicants. At the New York Telephone Company, only 20 percent of those taking an operator's test pass. At Campbell-Mithun Advertising in Minneapolis, the applicant pool is generally below their minimum standards in reading and writing. The ratio of applicants to those qualifying is 20:1 for secretaries and 10:1 for supply and mail clerks. Motorola finds that only 20 percent of its applicants can pass a simple 7th grade English comprehension or 5th grade math test. Michigan Bell reports that only 2 out of 15 applicants for clerical positions successfully complete all the written and typing tests.

When Mazda moved to Michigan, the company was engulfed by job applications -- more than 100,000 people applied for 3,500 jobs at its new state-of-the-art assembly plant. Mazda tested more than 80,000 people, and found that many applicants didn't have even the basic skills required to qualify them for a quality job.

According to employers in a 1983 Colorado Employability Skills Survey, "Sixty percent of the young people applying for jobs were rejected because of deficiencies in the application/interview process. Young applicants were particularly weak in legible writing, spelling, English usage, and often failed to express an interest in or knowledge of the position and the company."

Chemical Bank in New York gives prospective tellers a basic math test. The percentage of applicants passing the test declined from 70 percent in 1983 to 55 percent in 1987. In Massachusetts, a state-sponsored job program reported that the average reading ability of participants dropped in the last five years from 9th grade level to 4th grade level as the local job market tightened.

Employers are practically unanimous in their concern that competencies of entry level workers are deficient. These include reading, writing, mathematics and communication skills. These basic skills deficiencies of workers are a serious concern for business, regardless of their location, size, or type, and regardless of the type of entry level job.

An overwhelming majority of the business representatives consulted indicated entry level workers should read at least at the eighth grade level. However, many held that the increased technological content of manuals and

required reading materials coupled with greater demands on entry level workers to maintain and upgrade the equipment they operate requires an 11th or 12th grade reading level. Additionally, the majority expected entry level workers within office settings to have a sound grasp of grammar and spelling.

With regard to the basic skills of reading and writing, here are samples of what employers indicated:

Reading and Writing

"Technicians must be able to read at the 12th grade level or above since technical, safety, and quality control manuals are written at this level."

Dr. Raymond Reed
Rockwell International
Corporation
Dallas, Texas

"CRT and Word Processing employees are not well prepared in basic skills areas, even to the point of not being able to thoroughly and accurately complete employment applications."

Dave M. Forsythe
ARCO Oil and Gas
Dallas, Texas

"Assemblers and machine operators should be able to read at an 8th grade level. The employee manual is required reading and is written on the 8th grade level."

David Ayres
ITW Switches
Chicago, Illinois

"Training materials are written in levels requiring an eighth grade reading comprehension level. However, the jobs require maturity and the ability to deal effectively with the public."

Fred Threadgill
Walt Disney World
Company
Orlando, Florida

"Assistant Managers are required to have a high school or equivalent degree. A 12th grade reading level is required to understand operations and store administration manuals."

Denise Griffith
KFC National
Management Company
Irving, Texas

"Writing skills continue to decline, particularly the ability to write declaratively, whether it is a sentence, a paragraph, or a several page report. This is the area where we have had to do the most remedial work over the past 5-10 years at all levels."

Gordon Bonfield
Tenneco
Houston, Texas

The National Assessment of Educational Progress assessment of the literacy skills of young adults ages 21 to 25 confirms business' assertions, finding that sizeable numbers were unable to do well on tasks of even moderate complexity. Three out of five 20-year-olds in our country could not get from point A to point B on a map; three out of five could not add up their bill after lunch and did not know if they were given correct change. And while three out of five could read the lead article in a newspaper, they could not reiterate its salient points.

Nine out of ten employers consulted indicated that entry level positions require a solid basic mathematical foundation. Entry workers should be

able to work with fractions, decimals, determine proportional relationships, and work with metric measurements. Here are samples of what employers say:

Mathematics

"General material handlers need to have a minimum of 10th grade computation ability. They should be able to recognize fractions and decimals and be able to perform those conversions, as well as those from the metric system."

William Davis
Eagle Steel Products
Louisville, Kentucky

"Understanding numerically controlled manufacturing processes is a major problem area. They must be able to understand and use computer-controlled machine tools."

Laurence H. Polsky
Cooper Industries
Houston, Texas

The "Mathematics Report Card" issued by the National Assessment of Educational Progress in June 1988 stated that "the highest level of performance attained by any substantial proportion of students in 1986 reflects only moderately complex skills and understandings." That includes computation with decimals and simple fractions, measurement, calculation of areas of rectangles and interpretation of graphs.

This report states that nearly half of American 17-year-olds cannot perform math problems normally taught in junior high school, 27 percent of 13-year-olds could not perform math work normally taught in elementary school, and only six percent of 17-year-olds could solve problems that required several steps or algebra.

Nearly all business representatives stressed the importance of communication skills, noting advancement beyond entry level is highly unlikely without this ability.

Patricia Donald, BellSouth Corporation, Atlanta, Georgia, describes the gap as follows: "Our performance problems in clerical positions and sales representatives are generally tied to communication skills, such as oral, ability to write, and persuasiveness."

Here is what other employers indicate:

Communication Skills

"Telephone etiquette, customer service, grooming and dress communicate positive or negative feedback to customers."

Mike Wilkerson
Scotty's
Winter Haven, Florida

"Tellers need excellent oral communication skills to interact with customers, peers, management, and all levels of officers of the bank. They also need basic writing skills."

Lisa Cohen
First Chicago National Bank
Chicago, Illinois

Business also expressed concerns about workers with deficiencies in basic workplace abilities.

Many of today's entry level jobs require a greater span of responsibilities, and greater ability to adapt to change. In addition to the three Rs, business noted that today's jobs require skills, attitudes and abilities generally thought of as needed at the supervisory and managerial level. Businesses, regardless of location, size, or type, consistently noted

deficiencies in such areas as problem solving, self discipline, acceptance of responsibility, reliability, initiative, teamwork, and the work ethic. Most business representatives wanted entry level workers to operate with minimum to moderate supervision.

Specifically, in countless conversations, employers reiterated a need for young people to be able to figure out what they need to know and how to find that information. Above all, they note that employees must be able to think their way creatively through tough problems.

Describing the skill needs of the future, Ernest J. Savoie, Director of Ford Motor Company's employee development program, said employees must be willing to work in groups, they must be computer literate, and they must be able to understand the production process.

Here are samples of what other employers said:

Flexibility and Adaptability

"The financial industry has been experiencing dramatic change, sometimes on a daily basis. Flexibility and adaptability are important in coping with these changes in the financial industry."

Karen Rhodes
Federal Reserve Bank
Atlanta, Georgia

"We look for people who are promotable. These are adaptable people who are willing to volunteer, pitching in beyond the job description."

Deidre Abair
Atlanta Journal and Constitution
Atlanta, Georgia

"Flexibility and adaptability are very important in a small company. They have to be able to do more things."

Dennis L. Havlin
Ramp Manufacturing
Dundee, Florida

"Our jobs are changing rapidly due to reorganization and technological changes. Our workers of the future can expect at least three to four career changes requiring retraining during their careers in our companies. They will increasingly be called upon to adapt and learn ways to conduct our business. Also, the international business environment we operate in requires increased flexibility."

Patricia Donald
BellSouth Corporation
Atlanta, Georgia

Problem Solving

"We are working with a quality team concept -- working in a team environment for solving work problems and interpersonal problems."

Michael Badka
Motorola
Schaumburg, Illinois

"We notice a problem of follow through. We detect the inability to think through or to take ownership of the problems they unearth. They tell their customers they cannot help, give wrong answers, or refer to their co-workers who might know less than they do."

Elizabeth R. Rowe
Rich's Department Store
Atlanta, Georgia

"Problem solving becomes critical, particularly for technical positions. For example, test technicians must be able to

trouble-shoot and determine causes of problems by analyzing computer data."

Dr. Raymond Reed
Rockwell International
Corporation
Dallas, Texas

Self Direction and Initiative

"Seventy-five percent of entry level positions require a person to function relatively independently after a probationary period."

Deidre Abair
Atlanta Journal and
Constitution,
Atlanta, Georgia

"Entry workers are frequently asked to juggle three or four different tasks simultaneously -- to function with a minimum of supervision with different supervisors, peers, and technologies."

Martin Martinez
Merck & Company
Rahway, New Jersey

"Minimal supervision is important. In a small business, every person is critical. Each person is very much on his/her own, making hourly decisions."

John Ziegmann
ZMark
Houston, Texas

"They go to their supervisor to resolve problems that are within their competence to resolve."

Elizabeth R. Rowe
Rich's Department Store
Atlanta, Georgia

Attitudes and Work Habits

"Discharges have been related to reliability -- not showing up on time regularly. American high school students have the most problems in this area."

Bill Fleet
Marriott Hotel
Seattle, Washington

"There is a widespread attitude of 'that's not my job.' Workers need to overcome that. They are too dependent upon specific, explicit instructions."

Ronald Schafer,
Peoples Gas, Light, &
Coke Company
Chicago, Illinois

"Absenteeism is our number one problem. Many workers are not work ready, and do not demonstrate a good work ethic. The day after pay day, twenty percent of our workers are absent."

Paul Lucas
Precision Air
Bartow, Florida

"Our entry level workforce consists of fairly well educated suburban teenagers and young adults...the problem is attitudinal and motivational rather than the lack of skills."

Judy Richter
Capezio Dance Theatre Shop
Lawrenceville, New Jersey

Summary: Business' Workplace Needs

In summary, businesses consistently noted that entry level workers and applicants did not have the skills to:

Read and comprehend policy and instruction manuals as well as technical material

Write sentences with correct sentence form, spelling, punctuation, and other matters of mechanics

Perceive errors and rewrite

Speak and explain ideas clearly

Answer and ask questions and follow verbal directions

Add, subtract, multiply and divide

Work with fractions and decimals

Employers also identified deficiencies in these more technical skills:

Measure and comprehend spatial relationships, and use metric measurements

Type with accuracy and speed

Work accurately with computers and computerized programs

Finally, employers noted that they needed -- but were frequently unable to recruit -- employees with positive attitudes and the ability to:

Learn, be flexible, and respond to change quickly

Deal with complexity, that is, learn and perform multiple tasks and analyze and deal with a wide variety of options

Identify problems, perceive alternative approaches, and select the best approach

Operate independently after a brief but intensive orientation period or after an initial training period

Work cooperatively with people of different personalities, race, sex, across different authority levels and organizational divisions

Be punctual and dependable as well as show pride and enthusiasm in performing well.

The Implications of the Growing Skills Gap

These skills deficiencies in the workforce are costing American business monetarily, through waste, lost productivity, increased remediation costs, reduced product quality, and ultimately a loss in competitiveness.

> **Item:** *An April 27, 1988 New York Times article, "Business Teaching 3 R's To Employees in Effort to Compete" reports: Many education researchers and economists say the lack of basic literacy and mathematical skills has caused costly mistakes, reduced productivity, increased the need for supervision and led to accidents. For example, the Metal Fab Corporation, a manufacturer of bellows based in Ormond Beach, Florida, estimates that it could save up to $1.2 million a year if its employees had stronger mathematical and reading skills. Because some employees have trouble measuring, the company's level of wasted material is higher than it should be. In addition, workers too often have trouble reading blueprints, forcing the plant to redo orders and pay overtime.*

If these gaps are not sufficiently addressed, this country can expect a severe shortage of qualified entry level workers. This scarcity of qualified workers can cause employers to: 1) employ under-qualified workers, which could result in inferior product quality, thus reducing our ability to compete in the global marketplace; 2) competitively

seek out qualified workers already employed in other companies, thus driving up the wage scales, and reducing our price competitiveness; 3) expend massive resources to remediate workers to bring them up to a productive level; or 4) take the jobs elsewhere, thus reducing American job opportunities and eroding our economic base. None of these options is satisfactory.

Currently, one out of three American corporations provides some form of basic skills training for its employees. An American Society for Training and Development Study predicts that American industry will have to spend as much as $25 billion yearly on remedial education.

Motorola Inc. Vice President Carlton Braun testified before the Joint Economic Committee in April 1988 that the company spends about 60 percent of its employee training budget on remedial training in basic math and reading skills. Braun said employers like Motorola, a multi-national manufacturer of electronics products, are "fighting for survival" because of fierce international competition, and need a workforce that is literate in basic areas such as reading, writing, and mathematics. "We have found to our disappointment that many workers are not prepared to operate the factory of the present, much less of the future," said Braun.

As one economist puts it: If it takes America 80 man-hours to make a Ford, and it takes Japan 40 man-hours to make a comparable Toyota, economic logic does not say that we get to make half as many cars. It says that we make no cars.

Federal Express: Computers Are Changing Entry Level Workforce Requirements

Field:	Small Package Air Express
Assets:	$2.27 billion
Approximate Sales:	$2.60 billion
Employees:	40,000

Entry Level Workforce

Federal Express hires 1,200 to 1,500 entry level workers every year. Beyond the basic need for workers with a high school education, Federal Express needs individuals with experience on or knowledge of computers. Technology is becoming a bigger part of the work environment, and in some cases it has created barriers to upward mobility for entry level workers. Cargo handlers do not need to work with computers, but operations agents (the next step) do. These are the persons who enter all the data in the computer about packages. Cargo handlers without computer skills will not be promoted.

Screening and Recruitment

Changes in the quality of the entry labor pool and in technological demands of the work have caused Federal Express to become innovative in its recruitment and screening. Federal Express uses a peer interviewing process. Employees who know an individual qualified to fill a vacant position have the authority to interview and refer that person to Personnel or other managers for a second interview. Company philosophy is that the workers are most familiar with the skills required to perform well. Staff members are trained on how to interview and select employees. The system works. Before the peer interviewing system was instituted, one out of ten potential employees was hired; now one out of two potential employees sent to management is hired.

Training

New employees spend their first week in training, during which they are shown video tapes about their jobs and told explicitly what is expected of them. They are encouraged to ask questions about any aspects of their jobs that they don't understand. Federal Express also offers management development courses for employees who want to advance in their careers.

Building a Quality Workforce

Federal Express believes business and the education system must work together to build a quality workforce. The company suggests a formal system whereby businesses and schools can have a "meeting of the minds." This is essential on the local level so that resources and contacts in a specific geographic location are fully utilized. Schools must actively seek out businesses' help in educating students. Federal Express sends representatives to schools to give seminars on qualifications needed to work for the company. However, they are careful not to impose their will upon the schools by insisting on or initiating programs that the school system has not requested.

Summary

As jobs become more technology oriented at Federal Express, the company is able to find fewer qualified applicants. Job applications have dropped approximately 40 percent in the last few years. At the entry level, a large percentage of applicants are marginally literate and computer illiterate. Federal Express has concluded that, in the future, business will need to provide remediation in order to build a quality workforce.

BellSouth: Looking Toward The Year 2000 -- The Information Age

Field:	Telecommunications
Assets:	$27.4 billion
Approximate Revenue:	$12.3 billion
Employees:	100,600

Entry Level Workforce

BellSouth employs 22,000 employees in entry level positions such as operators, clerical staff and technical installers. They hire approximately 2,000 people per year. The nature of BellSouth's business requires entry level workers to be adaptable to technological change and to have good communication skills (oral and written). The use of automated technical equipment is eliminating the need for typewriters and manual filing systems and has added pressure for entry level workers to upgrade their skills.

Screening and Recruitment

Obtaining applicants is not the problem for BellSouth, obtaining *qualified* applicants is. Approximately one out of seven applicants is hired. Because all jobs require passing a basic aptitude test, entry level hires are screened for reading and computation skills. Performance problems in these jobs are generally tied to communications skills, ability to write, and persuasiveness.

Training

People who can be trained are key to the success of BellSouth. Entry level workers are not expected to be proficient in the telephone industry, but they must have basic skills. BellSouth is constantly upgrading the skills of its workers by custom designing training classes to their particular needs. All new employees of BellSouth must undergo an initial "company training" course. Workers of the future can expect at least two to three career changes requiring retraining during their careers at BellSouth.

Building a Quality Workforce

According to BellSouth, in order to build a quality workforce, the public schools need to tell their students what business requires of them. Schools must realize that if students expect to get jobs, their skills cannot be substandard. BellSouth deploys community relations teams to work with all levels of education to make them aware of BellSouth and its entry employment requirements.

Summary

Information age technologies are remaking the modern workplace, especially at BellSouth. The company is increasingly concerned that today's graduates are not well prepared in the "three Rs," much less prepared for the problem solving, communication, creative thinking and flexibility skills that are required by their jobs. According to BellSouth, the challenges of the Information Age are as much human as technological. Unlike the critics who worry that computers will replace people, BellSouth believes that people -- not machines -- will spell the difference between success and failure in a world driven by information. Sophisticated hardware and software cannot fulfill their promise without decisive leadership, and leadership will always pivot on human judgment. New business strategies cannot be conceived or executed by machines. Also, the delivery of high quality service will always depend on first-rate employees.

Motorola, Inc.: Their Fundamental Objective Is Total Customer Satisfaction

Field:	Electronic Equipment, Systems and Components
Assets:	$5.3 billion
Approximate Sales:	$6.7 billion
Employees:	94,400

Entry Level Workforce

Motorola is committed to keeping its manufacturing jobs in the U.S. The company hires several thousand entry level employees per year. Entry jobs have become more diversified (multiple task oriented) with more employee involvement in decision making. Because the company is working with the "quality team" concept, entry level workers are required to solve problems working in a team environment. Workers will be increasingly expected to work independently and have the flexibility and adaptability to know every job on the line, which was not the case five years ago.

Screening and Recruitment

Motorola has tightened its policies on new hires so that more of its in-house staff will qualify for internal job opportunities. Prospective employees are now expected to complete an application form (in person) and take a simple written test of seventh grade English comprehension and fifth grade math. In the first year, only about 20 percent of the applicants around the country were found acceptable.

Training

Motorola provides retraining or additional training because the school system from kindergarten through high school (K-12) has failed to meet standards. Over 40 percent of current workers need this additional training. All upgrading is done on company time. Resources must be made available so that people can get the training to keep their jobs and raise their skills.

Building a Quality Workforce

Motorola indicates that the schools must be very flexible in changing their curriculum to meet the changing needs of the business community. Business needs to buy into 100 percent partnership with the K-12 school systems, particularly at the junior and senior levels in high school. The company notes that while the public education system is the primary preparer of the future workforce, community colleges must provide re-training or remedial training when the K-12 system fails to do its job.

Motorola understands that business has to do more to improve education. The quality of the factory workers is ultimately just as important as the work that is being done in the engineering labs. The company believes that businesses must get to know the schools better in order to facilitate school improvement. Motorola actively participates in a variety of partnerships, including curriculum development, scholarships, and other efforts to improve the quality of the schools and the quality of the workforce.

Summary

Motorola has raised its skills requirements and expects to continue to do so to compete in the global marketplace. They indicate that U.S. workers need English, basic math, problem-solving and interpersonal skills, as well as flexibility for continued learning. Motorola believes that everyone will need to learn new skills continually to be prepared for the future workplace.

Security Pacific: The Growing Skills Gap Is a Critical Issue

Field:	Bank Holding Company
Assets:	Over $73 billion
1st Quarter 1988 Net Income:	$147.2 million
Employees:	42,000

Security Pacific Corporation is a world-wide financial services company -- in assets, the seventh largest United States bank holding company.

Entry Level Workforce

Corporate-wide, approximately 6,000 entry workers are hired per year, primarily as tellers, clerks, data entry operators and receptionists. With the introduction and use of new technology, workers must be familiar with and adept at computer use. Additionally, jobs have become more marketing-oriented and require more "selling" to customers -- requiring good communication and interpersonal skills. Overall, the company notes a deficiency of candidates with strong language skills and technical computer skills.

Screening and Recruitment

The company finds that many entry candidates are unable to pass a simple test estimated to be below the sixth grade level. Many cannot balance numbers, count, add and subtract or alphabetize at this minimum entry standard. The company also finds candidates lacking in social and communication skills necessary for customer service jobs. Generally, four to five people are interviewed to fill one job.

Training

Security Pacific has various in-house training programs for entry level workers. Tellers receive five days of classroom training plus on-the-job training provided by supervisors who themselves have received training for trainers. Security Pacific has extensive skills training programs in word-processing and telephone equipment, and intensive training in customer service and business communication skills.

Building a Quality Workforce

Security Pacific believes that business needs to be a partner and play a joint role with educators in preparing future workers. The company notes that ongoing dialogue and exchange with educators is important -- educators need to better prepare students in basic communication and oral skills, as well as in business expectations. Security Pacific has been involved in a variety of activities including legislation, mentoring, adopt-a-school programs (primarily in disadvantaged neighborhoods), Regional Occupational Programs in California, and summer intern programs.

Summary

Security Pacific indicates that they encounter high school graduates with poor basic communication skills, and clerical workers with deficient typing skills who were trained in schools on out-dated equipment. They indicate that they have applicants for tellers positions who cannot balance their own checkbooks accurately; therefore, they are unable to handle customers' accounts. Security Pacific notes a definite gap between their needs for qualified workers and the workers who apply for their jobs. This gap is growing, and it is becoming a critical issue to the company.

Education's Response

Introduction

Five years after the report *A Nation At Risk* was published by the National Commission on Excellence in Education, we continue to ask, how well do our schools perform? What do our students know, what do they study, and what is the extent of progress that has been made? How accountable are the schools? How well do educators feel they are doing in meeting demands of the workplace? What are the barriers that they encounter?

In this section we will examine how well education is responding to the challenge. What do educators say about how business can best work with the schools to improve the quality of education, to provide effective remediation at the worksite, to bridge the gap between school and work or higher education? How do these responses compare with business' perspectives on preparing a quality workforce?

The Status of Education Reform

Studies of the status of education reform reveal a "good news, bad news" report card. On the one hand, American education has made some noteworthy progress in the last few years. Since 1980, combined average Scholastic Aptitude Test (SAT) scores have recovered 16 points from the sharp drop between 1963 and 1980. Nationwide, our schools have moved back into a more rigorous academic curriculum.

In his report, *American Education, Making It Work*, Secretary Bennett sums it up:

The precipitous downward slide of previous decades has been arrested, and we have begun the long climb back to reasonable standards. Our students have made modest gains in achievement. They are taking more classes in basic subjects. And the performance of our schools is slightly improved. This is the good and welcome news: we are doing better than we were in 1983.

A review of education reform efforts of the states also reveals measurable progress. All 50 states have adopted some type of education reform -- some starting before 1983. More than a dozen have completely overhauled their school systems. Roughly 40 states have raised high school graduation requirements; in 19 states students must pass a test to receive diplomas. Forty-six states have mandated competency tests for new teachers; 23 have created alternate routes to teacher certification. Teacher salaries have increased, on average, more than twice the rate of inflation, to an average of $28,031 this year. Six states are now legally empowered to "take over" educationally deficient schools (although New Jersey is the only one to attempt to do so to date).

Efforts have also been made to reduce truancy and dropout rates, introduce computer literacy and foreign languages in the early years, establish after school programs, require more basic academic courses for a high school diploma, extend the school year, and enhance job-readiness programs.

Nationally, the education enterprise can boast impressive outcomes in quantity of

education provided. According to the U.S. Bureau of the Census, three quarters of the adult population have completed high school, and among adults in their early 30s, the proportion rises to 87.5 percent. Some 63.6 percent of today's high school graduates begin some form of post-secondary education within four years of graduation. Some 17.4 percent of all American adults have completed four years of college, up from 7.7 percent in 1960. Among those in their early 30s, the ratio of college graduates has risen to 25 percent.

According to results of a nationwide survey, Americans have rated public schools higher in recent years. Those surveyed felt that the two largest problems facing schools were drugs (28 percent) and lack of discipline (24 percent).

On the other hand, nearly everyone remains dissatisfied with the quality of our educational performance -- employers, the military, and even college professors and graduate schools. Fewer than 40 percent of American 17-year-olds possess what the National Assessment of Educational Progress (NAEP) terms "adept" reading skills, and only 20 percent do an "adequate" (or better) job of writing a persuasive letter. While few adults in their early 20s are wholly illiterate, most are woefully deficient in necessary skills.

Again, Secretary Bennett summarizes our educational standing as follows:

We are not doing well enough, and we are not doing well enough fast enough. We are still at risk. The absolute level at which our improvements are taking place is unacceptably low. Too many students do not graduate from our high schools, and too many of those who do graduate have been poorly educated. Our students know too little, and their command of essential skills is too slight. Our schools still teach curricula of widely varying quality. Good schools for disadvantaged and minority children are much too rare, and the dropout rate among black and Hispanic youth in many of our inner cities is perilously high. An ethos of success is missing from too many American schools. Our teachers and principals are too often hired and promoted in ways that make excellence a matter of chance, not design. And the entire project of American education -- at every level -- remains insufficiently accountable for the result that matters most: student learning.

U.S. students still rank far below those in many other countries -- particularly in math and science achievement. In many other countries, students are taught algebra before secondary school. A June 1988 report, the "Mathematics Report Card" issued by the NAEP, cited comparisons showing that average Japanese students outperform the top five percent of American students enrolled in college-preparatory classes.

In summary, according to the U.S. Department of Education, "student achievement and school performance earn a mixed grade for progress during the past five years. Despite encouraging improvements in patterns of course-taking, gains in student learning are slight and the average level of student skill and knowledge remains unacceptably low. Overall school performance is up a little bit since 1983, but by almost any standard we are not where we need to be."

Another perspective on education reform can be found in an article by Denis Doyle, "Business-Led School Reform: The Second Wave." Mr. Doyle looks at business' involvement in education, since "the modern firm is both the consumer of

education and the model for the school of tomorrow." Mr. Doyle asserts: "The story of business involvement in education is worth telling, not so much because of its accomplishments, but because it is just beginning. The first wave prepared the ground; the second wave will produce results." He states that, indeed, "the reform movement has been both modest and incremental. While symbolic change has been great, substantive change has not. What have been altered are perceptions. It is clear that the business community is now ready to work with schools to improve education -- or, if necessary, to work around them."

While education reform efforts have brought undeniable progress, many experts conclude that there has been least progress for the non-college bound and for dropouts.

According to the *1987 Digest of Education Statistics*, students at ages nine, 13, and 17 were reading better in 1984 than they were in 1971. However, the average reading proficiency of black and Hispanic 17-year-olds is only slightly higher than that of white 13-year-olds. The economic outcomes of this are apparent. Those with lower levels of educational attainment were more likely to be unemployed than those who had attained higher levels of education. The 1986 unemployment rate for those with one to three years of high school was 15.4 percent compared to 8.1 percent for those with four years of high school and 2.4 percent for those with four or more years of college.

The problems of dropouts are highlighted by comparing the labor force and the unemployment status of 1984-85 dropouts and graduates. Only 67 percent of the dropouts were in the labor force (employed or looking for work) and of those in the labor force, 36 percent were unemployed. Of the high school graduates who were not in college, 82 percent were in the labor force and 25 percent were unemployed.

Educators' Views of the Gaps

Educators agree with business about the overall goals of education, and about the skills needed in the workplace. However, the majority of educators maintain that their graduates are well prepared for entry level positions, and only a few educators acknowledge that the gaps are as severe as business indicates.

Graduates' Preparedness for Work

Almost all of the educators consulted agree that an important criterion of measuring school performance is the extent to which their graduates make a successful transition to work or higher education. The overwhelming majority of educators in the sample maintain that their graduates are well prepared for available entry level positions.

"I think our graduates are well prepared as entry level workers in business. We tend to keep up with the latest technology."

Gloria Christler, Chairperson
Business Division
Atlanta Junior College
Atlanta, Georgia

"Graduates are prepared to perform as entry level workers. We are not perfect, but we are doing a good job."

Harvey Rucker, Director
Vocational/Technical Education
Minneapolis Public Schools
Minneapolis, Minnesota

"We are not graduating literate students. We need a national standard for teacher

certification. We must look hard at teacher training."

Gayle Fallon, President
Houston Federation of Teachers
Houston, Texas

The Nature of the Workplace

Almost all of the educators consulted in this study concluded that technology is having a significant impact on entry level employment. Technological innovation has changed and will continue to change the employment environment. Entry level employees will work with more sophisticated tools, perform multiple tasks, and will have to respond to ongoing technical change within their trades.

Here are samples of what educators said about the nature of the workplace:

"A greater emphasis will be placed on entry level skills that people have not paid much attention to in the past -- for example, flexibility, proper work attitude, and the ability to communicate."

Harvey Rucker, Director
Vocational/Technical Education
Minneapolis Public Schools
Minneapolis, Minnesota

"Computer operation will be increasingly a necessary entry level skill in the future."

Dr. Margaret Harrigan
Associate Superintendent
- Instruction Services
Chicago Public Schools
Chicago, Illinois

"Basic skills requirements have increased due to the complexity of the jobs themselves. Classes and courses have become more complex and more difficult."

Dr. James D. Gray
Executive Dean
DeKalb Technical Institute
Clarkston, Georgia

Entry Level Workplace Requirements

No overall agreement was evident among educators surveyed about the precise levels of reading level proficiency and computation ability required for entry level workers. But all agreed these basic skills, as well as the ability to communicate effectively with a wide variety of people, are indispensable.

Approximately half of the educators consulted believed 8th to 9th grade reading levels would meet most entry level workplace requirements; the other half noted that they believed a 10th to 12th grade reading level was required.

Reading and Writing

"Entry level workers must read 8th grade level materials and must have the ability to comprehend basic directions."

Patricia W. Hunter, Director
Career and Continuing
Education Curricula
Polk Community College
Winter Haven, Florida

"Entry level workers should really be able to read at the 10th grade level, and employers should want this level of ability. The ability to write an organized and coherent paragraph is an essential skill for a new worker."

Dr. Margaret Harrigan
Associate Superintendent
- Instruction Services
Chicago Public Schools
Chicago, Illinois

"New workers need to know how to write. We have not required the writing levels that we really should. New workers need to be able to write complete sentences with

correct spelling, grammar and sentence structure."

Dr. Kenneth Northwick
Acting Deputy Superintendent
Minneapolis Public Schools
Minneapolis, Minnesota

Findings were mixed among educators surveyed with regard to mathematics skills needed. Roughly half indicated that the basic computation skills of addition, subtraction, multiplication, and division would meet entry level requirements; slightly fewer expressed the need to go beyond these basics by including the ability to work with fractions, decimals, and spatial concepts; one in ten indicated that entry level workers must become computer literate.

Here is what educators had to say:

Mathematics

"Workers should be able to add, subtract, divide and multiply, use a calculator and have some reasoning and problem solving skills."

Dr. William C. Phillips
Interim Superintendent
Minneapolis Public Schools
Minneapolis, Minnesota

"Workers should be able to add and subtract whole numbers with some multiplication and division. They should be able to perform at the 8th grade level of general math which does not necessarily include algebra."

Dr. Kenneth Northwick
Acting Deputy Superintendent
Minneapolis Public Schools
Minneapolis, Minnesota

"Workers must be able to compute in all areas of beginning math, including fractions, decimals, ratios and proportions. These skills will be necessary for technical workers at all levels."

Judith Stein, Director
Career Education
Dade County Public Schools
Miami, Florida

Educators were unanimous about the importance of effective communication skills.

Communication

"Students need to be better speakers and critical thinkers, in addition to being able to read and write. They need to be able to differentiate and evaluate what they hear. In general, students have to have some skills relating to the media, understanding the technology as communication media. Students also need human relations skills. We cannot assume that because the city is diverse, that students are automatically exposed to the diversity. They need stability in getting along with people from a variety of backgrounds."

Janet L. Witthuhn, Director
Planning, Evaluating and
Reporting Department
Minneapolis Public Schools
Minneapolis, Minnesota

"Workers should be able to relay accurate messages, and understand the specific information relevant to their jobs. Most should be computer literate."

Dr. Myrtice Taylor
Assistant Superintendent
Curriculum and Research Services
Atlanta Public Schools
Atlanta, Georgia

"New workers need to be effective in both speaking and listening skills, and be especially good listeners."

Donald Howard
District Vocational Coordinator
Township High School District 211
Palatine, Illinois

A clear consensus was apparent among educators consulted about the importance of problem solving skills, and the ability to be flexible and adaptable.

Problem Solving

"Entry level workers should be able to solve problems that require creative solutions. Alternatives should be generated by the problem solver. They also should be able to weigh the choices."

Dr. William C. Phillips
Interim Superintendent
Minneapolis Public Schools
Minneapolis, Minnesota

"New workers should be able to deal with problems of interpersonal relationships. Also, they should be able to translate abstracts into concrete. They should be able to take things from real life situations and make wise judgments."

Janet L. Witthuhn, Director
Planning, Evaluating and
Reporting Department
Minneapolis Public Schools
Minneapolis, Minnesota

"Entry level workers must be able to solve word problems, requiring thinking and reasoning skills."

Dr. Myrtice Taylor
Assistant Superintendent
Curriculum and Research Services
Atlanta Public Schools
Atlanta, Georgia

"Communication skills should be such that entry level workers can solve oral and written problems."

Gayle Fallon, President
Houston Federation of Teachers
Houston, Texas

Flexibility and Adaptability

"Both flexibility and adaptability are essential for new workers. Educators have to help workers understand that jobs will not be exactly like the classroom. This will help workers understand they need continuous training and growth to get ahead."

Patricia W. Hunter, Director
Polk Community College
Winter Haven, Florida

"Flexibility and adaptability are very important. New workers won't be able to succeed if they cannot get along with other people and be able to change work functions and tasks."

Dr. William C. Phillips
Interim Superintendent
Minneapolis Public Schools
Minneapolis, Minnesota

"Because of the change in careers, the skills of flexibility and adaptability are those most important for workers. Job specific training is not as important as the ability to adapt to a changing workforce."

Judith Stein, Director
Department of Career Education
Dade County Public Schools
Miami, Florida

"Flexibility and adaptability are critical for new workers. Technology is changing so fast that if employees do not change with it, they will become obsolete -- victims of 'Future Shock'."

Donald Howard
District Vocational Coordinator
Township High School District 211
Palatine, Illinois

"Flexibility and adaptability are essential skills for new workers. Rigidity is not an

asset to working. No one set of skills will last a lifetime."

Dr. Margaret Harrigan
Superintendent
Instruction Services
Chicago Public Schools
Chicago, Illinois

Self Direction and Initiative

"As with reasoning skills, they should be on their own within a relatively short time: three to six months."

Gloria Christler, Chairperson
Business Division
Atlanta Junior College
Atlanta, Georgia

"Given the way most jobs are structured, you can't expect a high degree of supervision in the entry level job. Whether it is desirable or not, the students have been prepared to enter a work environment where they will be asked to work with little supervision."

Janet L. Witthuhn, Director
Planning, Evaluating and
Reporting Department
Minneapolis Public Schools
Minneapolis, Minnesota

Attitudes and Work Habits

"Attitude is very important; the greatest deterrent to getting and keeping a job is a bad attitude. There is a lack of responsibility, inability to take directions, inability to establish a successful relationship with employer and co-workers, inability to get to work on time, and a casual attitude about attendance and attire."

Dr. Margaret Harrigan
Superintendent
Instruction Services
Chicago Public Schools
Chicago, Illinois

Business-Education Partnerships

The high percentage of business-education direct linkages discovered in this study reflects the great amount of attention currently being paid to building relationships between business and education. **Four out of five business representatives consulted and virtually all of the educators consulted indicated that they were engaged in some form of collaborative business-school venture.**

Many of these partnerships were addressing the schools' policy, administrative and managerial issues as well as developing programs to improve administrator, teacher, and student performance. Some of the activities reported included: (1) instituting joint ventures; (2) initiating policy changes; (3) planning and implementing long-term school improvement efforts; and (4) providing management support and expertise.

About two-thirds of the businesses and educators surveyed contended that the principal impediment to building and maintaining partnerships was poor communication due to preconceived notions, unclear roles and responsibilities, and/or scarcity of organizational resources. It is clear that all sectors must improve their communication in order to close the skills gap and build a quality workforce.

Implications of Educators' Responses

In summary, educators were in virtually total agreement with business about what basic skills are needed in the workplace. However, the proportion of

educators who indicated that their graduates are prepared to perform as entry level workers was far greater than the proportion of business persons who felt these entry workers were adequately prepared.

Are business and education operating on common assumptions and definitions of entry level and of the skills needed, or does the problem lie in an inability to translate business needs into the way we teach our young people?

Educators may not be translating their understanding of business' needs into what happens in the classroom. Better communication between schools and business can help to make this connection.

Education needs to focus not only on what is taught, and when, but how to make it relevant to the workplace. Students should be told straightforwardly that if they cannot read, write, and compute, they will not get decent jobs.

Both business and education stressed the need to develop mechanisms to reduce the isolation of their worlds in order to better prepare students for the workplace and for responsible adulthood.

Education needs business to help educators and students understand the economy and economic and labor market trends, and the nature and organization of work; help students understand the performance standards expected in the workplace, and help enrich their curricula by making clear the connection between performance in school and opportunities available in the workplace.

Business needs education to set and maintain high performance standards, and to be accountable, not only for improvements in measures of academic achievement, but for conveying the importance of attendance, homework, behavior in class, responsiveness to authority, and other indicators of maturity and responsibility generally used in the workplace.

Business needs to do a better job of anticipating future needs, and communicating these needs to educators, to parents, to students and to other community resources that can help address these needs.

Generally, business was not able to articulate with specificity and precision what qualities and skills it needs in entry workers. While businesses know what they need, they often have trouble translating their needs to different audiences (i.e., describing "grade level equivalents" of their materials, manuals), often lack the "vision" of what they will need over the long term, and often fail to translate their human capital needs into their overall corporate strategic planning.

For example, according to a study of labor force planning in Fortune 500 companies, 46 percent of the companies did not prepare any formal human resource plans, 39 percent had incomplete plans, and only 15 percent prepare fully integrated plans advocated in the literature on human resource planning. Business needs to become more intelligent buyers, users, and developers of their labor pool to improve their own and the nation's productivity and ability to compete.

Aggressive action may be needed by business and education to learn from each other, and to change the way education is provided, to ensure a quality workforce and a productive nation.

Evidence points to a need to do more, more rapidly, and through different means, in order to make fundamental educational improvements. Business needs to articulate its future workforce needs better, and communicate these to education. Business intermediaries can help communicate this message, promote community collaboration and serve as facilitators between the sectors.

Education needs to develop better ties with community resources that can provide assistance, make a concerted effort to acquire greater knowledge of labor market and occupational trends, and stay current with changes in the workplace. Education research intermediaries can help document and disseminate knowledge about workplace changes and evaluate education improvement efforts.

Building a Quality Workforce -- Everybody's Job

How We Can Close the Gap

In order to close the skills gap, we need to: 1) Improve the quality of education for our nation's youth through fundamental education reforms in our nation's schools; 2) Mobilize businesses to assist schools in ways that capitalize on their comparative strengths and advantages; and 3) Mobilize the community -- all of the sectors -- to integrate efforts to ensure a quality education for our young people and a quality workforce for our nation.

Strengthen Our Educational System

Educators can improve their processes and their products by learning from successful businesses and seeking their help in these priority areas:

1. **Increase accountability**. Just as business must set and meet high standards for the quality of its products, so must the schools establish and enforce rigorous performance standards. Prince George's County, Maryland, for example, is initiating a program that places warranties on its students. The schools asked the business community to identify the skills they need, and the schools made a commitment to ensure that these skills are included in the instructional program. Any warrantied student found to be lacking in skills needed by employers will be "recalled" by the school and retrained at no expense to business.

   Accountability must be emphasized at all levels -- the schools, the teachers, and the students themselves. Just as business has decentralized authority and responsibility, schools should consider moving toward school-based management and accountability. For example, teachers in Rochester, New York are taking part in an experiment in which they have been given increases in pay as well as in responsibility and accountability. Teachers have been given expanded responsibilities for counseling students and a broader role in running schools through "school-based management" teams.

   Just as employers set performance standards for workers, schools should hold students accountable. For example, in Texas, officials have instituted a "no pass, no play" policy in which students who fail a course are ineligible for extracurricular activities.

2. **Strengthen the content of the curriculum and improve on its delivery**. Just as business must establish and maintain priorities, the schools should concentrate on excellence in the basics first. Just as business has had to adapt its methods and technology to remain competitive, the schools need to find ways to make the basics relate better to the workplace.

   For example, a fifth grade teacher in a McLean, Virginia school runs a simulation of a small economy in the classroom to give her students experience with fundamental

economic concepts such as competition, monopolies, bankruptcy, rents, or taxation. Reading a description of markets, sellers, and competition in a textbook means much more to a student who the day before has waged a price war with a seatmate to corner the market on hot dog sales.

While it is the responsibility of the public schools to strengthen the curriculum and improve on its delivery, the efforts of the school system can be supplemented and reinforced by business. The city of Jacksonville, Florida implemented a successful summer youth employment and remediation program through a collaborative effort between the Jacksonville Private Industry Council and the Duval County School Board. This program serves over 1,000 young people, mostly 14- and 15-year-olds, in four hours of classroom instruction in the morning and four hours of work on public sites in the afternoon. They reduced their dropout rates for the two-year-behind group from 37 percent to 21.8 percent and the special education group from 24 percent to 16 percent. This time, 92 percent of the youth passed their courses and 88 percent passed the Minimum Level Skills Test. Another result of their efforts was the continuing growth of private sector involvement and participation in the summer youth program, which resulted in 1,146 youths placed in jobs with over 500 employers during 1986.

3. **Recruit and reward good teachers and principals.** Just as business must be highly competitive in recruiting and retaining quality workers, so must the schools, through creative recruitment and retention efforts, performance-based pay plans, and other incentives. Some Superintendents such as John Murphy in Prince George's County, have asked for business help in recruitment, and have achieved notable success as described later in this publication. Dr. Murphy's business advisors recommended that the Prince George's Public Schools offer more fringe benefits to prospective teachers, and they developed a plan in which business provided incoming teachers with discounts on apartment rents, cars, restaurants, legal services, and other extra benefits. In one year alone, the number of applicants for teaching jobs went from 1,000 to 4,500. Dr. Murphy was then able to select the best qualified teachers for the 600 vacancies.

   In his book, *American Education, Making It Work*, William Bennett notes: "In education, as in business, the way to build a staff of outstanding professionals is to search broadly for talent, hire those who are best able to do the job, and then offer rewards and advancement to individuals who perform well. Those who fail to measure up should be given the opportunity to improve; those who don't should be shown the door."

4. **Improve educational opportunities and performance of the disadvantaged.** There is a direct link between quality education and a quality workforce. With the changing demographics, there will be fewer entry workers available, and those available will be from the less well educated segments of the population that have typically been least prepared for work. Therefore, business and education must develop partnerships which invest in human capital just as business invests in plants and equipment. Special efforts

are needed to target partnerships to assist the severely "at-risk" including dropouts and dropout-prone, and to invest earlier.

Numerous experts recommend this, including the Department of Education, the Committee for Economic Development, the Urban School Superintendents, the Carnegie Foundation for the Advancement of Teachers, and others. Department of Education recommendations for schools in educating disadvantaged children include:

1. Mobilize students, staff, and parents around a vision of a school in which all students can achieve;
2. Create an orderly and safe school environment by setting high standards for discipline and attendance;
3. Help students acquire the habits and attitudes necessary for progress in school and in later life;
4. Provide a challenging academic curriculum;
5. Tailor instructional strategies to the needs of disadvantaged children;
6. Help students with limited English proficiency become proficient and comfortable in the English language -- speaking, reading, and writing -- as soon as possible;
7. Focus early childhood programs on disadvantaged children to increase their chances for success; and
8. Reach out to help parents take part in educating their children.

5. **Increase competitiveness.** Just as individual businesses must respond to the market with increased flexibility and increased ability to identify and seize their market niche, so should the schools, through parent and student choice.

David Kearns and Denis Doyle, in *Winning The Brain Race: A Bold Plan to Make Our Schools Competitive*, call for a system of school choice based on competitive market forces; strict minimum levels of achievement; strong liberal arts curriculum for teachers followed by demonstrated across-the-board knowledge and competence, and teacher salaries and promotions based on demonstrated competence, performance and longevity; a uniform high school core curriculum; restoration of teaching a love of democracy and responsible citizenship; acceptance of greater responsibility for educational improvement by Washington, through models and exercising leadership.

In their study, *Investing in Our Children, Business and the Public Schools*, the Committee for Economic Development describes how to make a school competitive:

"*We believe that certain market incentives and disincentives can and should be introduced into public schooling. For example, regional or even statewide open enrollment systems. Such freedom of choice would ... send a message to those schools that are bypassed. One outcome would be product differentiation. We believe the evidence in favor of magnet schools is strong enough to warrant widespread support for increasing their number. Taking this a step further, a state or region might adopt a 'universal' magnet school plan.*"

The Governors' 1991 Report on Education, *Results in Education: 1987*, also comments on how to make a school competitive: There is a range of alternative choice models with which states and local districts can experiment. For example:

Neighborhood associations or groups of teachers might contract with a local school board to operate individual schools.

Minnesota enacted a program this year that shifts attendance choices to students, giving dropouts and "learners at risk" the option to choose alternative schools or learning centers. State aid of up to $3,600 follows each student to the new school.

Virginia's magnet school network shifts curricular choice to individual schools, allowing them to implement their own focused programs in science and technology and the fine arts.

Expand Business Involvement

Business should articulate its human resource needs with greater specificity and precision, in order to help educators meet their current and future needs. Business should expand its involvement and investment in our education system beyond symbolic efforts in ways that improve educational effectiveness and efficiency. Business should participate actively in policy, education improvement, and management activities.

1. **Take the initiative to broaden the base of political support/advocacy for the schools.** Business has leverage to improve the quality of education, by serving on school boards, either elected or appointed, or on advisory councils to Superintendents and principals, or working with elected officials, unions, and other community institutions such as universities and community colleges. If business makes the case that the community's economic and employment future is at stake, others will listen. In Cincinnati, recognizing the importance of quality public education, the business community rallied support to pass a levy to raise additional funds for the schools. With business support, the levy narrowly passed.

   The Business Roundtable's April 1988 Report, *The Role of Business in Education Reform: Blueprint for Action*, outlines programs and public policy actions that business should take in order to put education where it belongs -- a top priority for business involvement. Their recommendations are based on a set of guiding principles: 1) Select a limited number of education programs and do them well; 2) Conduct programs that are cost-effective; 3) Develop programs with high employee involvement; 4) Make a sustained commitment to education programs; and 5) Support programs that will serve the interests of business and society. They recommend that member companies of the Business Roundtable focus on local public policy issues such as curriculum standards, teacher competency, and teacher compensation.

2. **Develop community-wide collaborative efforts that increase communication and decrease the isolation of the education and the business communities.** This can be accomplished by bringing education to business (i.e., providing basic skills training in the workplace, or providing teachers opportunities to work in business settings). This can also be accomplished by bringing a clearer sense of workforce expectations into the schools (vitalizing the schools through awareness that good jobs demand literacy and other basic competencies,

and through expansion of initiatives to enrich the curricula young people are taught). Business can help in fostering successful transitions to work and to higher education.

Business can help improve the community's labor market information, thus providing greater access to employment and economic opportunities for young people. At one community forum, for example, business described the region's tremendous economic growth, the resulting building boom, and indicated that they expect these trends to continue. Yet, they could not find young people to work in $15 per hour bricklayer jobs or other trades. They talked about how the trades represent particularly good careers with rapid advancement and entrepreneurial opportunities, yet, with the current emphasis on the white collar professions, the young people and their parents do not think positively about the trades. They discussed the need to solicit the involvement and assistance of unions, parents, community colleges, apprenticeship programs, successful black business owners (as role models), the banks, and even the media, to convince people that the trades provide tremendous potential and job satisfaction.

3. **Undertake initiatives that assist schools in good management practices.** Current management techniques used by business to remain productive and competitive include decentralization and autonomy (in schools, this translates to school-based management), accountability and performance standards (in schools, this is advocated at all levels, from superintendents, to principals, teachers and students), professional development and merit pay, and application of new technology.

4. **Work to improve business' labor force planning for the short- and long-term**, both for the company's ability to attract, select, and retain a quality labor force, and to provide guidance to the schools. Business needs to become more intelligent buyers, users, and developers of their labor pool to improve their own and the nation's productivity and ability to compete.

The Challenge to Business and Education

Repeatedly, the businesses consulted in this study expressed concern that our young people -- the products of the American public school system -- are ill-prepared to hold available and/or future jobs. Many firms indicated their dependence upon outside or in-house resources to train or remediate entry level employees, or their need to recruit from sources other than the high schools.

While the number of youths available to fill entry level jobs is decreasing and will continue to decrease through the year 2000, the service sector, which is human-capital-intensive, is experiencing rapid growth. While our entry workers are coming to the market place with poor qualifications, our economy is continually producing jobs that require the highest literacy levels in the history of our country.

In our changing economy, business needs to anticipate the changes better and articulate its workforce needs in ways that educators can understand and respond. Business also needs to expand its involvement and investment in education in ways that produce measurable educational improvements.

Business needs to take an active role in working with education, and with other sectors within the community able to provide assistance, including government, volunteer sectors, parents, churches, and elected officials.

Education must seek business advice and guidance on the skills they need in their workplaces and then respond better to these needs. Educators need to find ways to translate these understandings into the content of the curriculum, the selection of personnel, and the management of the education enterprise -- and ultimately into the standards attained by their students.

Communities should seek to establish mechanisms to facilitate this dialogue and for planning, implementing, sustaining and evaluating their collaborative efforts. We need these concerted efforts in order to close the widening skills gap, build a quality workforce and increase the nation's productivity.

Community Partnerships That Work

Introduction

Across the nation, communities are identifying the skill gaps and deficiencies that are of greatest priority to them. They are taking actions to address these issues through a range of partnership initiatives among business, education, government, and other sectors.

Following are the profiles of three communities that have taken the first steps to overcome barriers and build partnerships to enhance the quality of education and economic opportunity for their young people. They demonstrate the importance of community-wide efforts to improve our children's education. They also illustrate the critical role of business in these community partnerships and demonstrate that business leadership and involvement can make a substantial improvement in a community's education of its young people.

The key to their success is that they have identified and reached agreement on their problems, gathered the necessary baseline data, established measurable goals, obtained and sustained top level business and education support, quality staff resources and financial and other support needed to follow through on initiatives. They have also continually assessed results, revised strategies where necessary, sought to expand their efforts and remained flexible to adapt as they go along.

In the past, most school-business partnerships have been deficient in their ability to reach students who are most at risk of educational failure. Even the best of our examples are still grappling with the very real problems of excessively high dropout rates, achievement scores that are barely rising back to where they were 20 years ago, and an array of complex issues facing today's young people. However, each of these communities has acknowledged the extent of their problems and is attempting to marshal the community's resources in ways that will ultimately make a difference.

These communities provide good examples of what strong leadership, serious commitment and broad community collaborations can do. They are not necessarily "the best in the nation," nor are they "perfect" partnerships. Rather, each one is a story unfolding. Various leaders were willing to tell their stories in hopes that they will help others, and gain added support for their own partnership efforts.

Prince George's County, Maryland

"We set a goal in 1984, and that goal was that by the year 1990, our school system -- which is 62 percent black, and functioning at the 50th percentile academically -- would be performing in the top quartile of the nation. We would prove that in that short span of time, we could turn a school system totally around, and that the black youngsters in this majority black school system could be competing with their most affluent neighbors in Montgomery County, Fairfax County, and other white, suburban, prosperous communities in America. And, if we didn't do it by 1990, I told the Board of Education that they should fire me."

Dr. John Murphy
Superintendent of Schools
Prince George's County, Maryland

Building Quality Education

After 13 years of court battles over a busing program to desegregate the Prince George's County Public Schools, the Board of Education, in partnership with business, industry and the community, launched a creative program to desegregate the school system as well as to improve the quality of curriculum and instruction with sensitivity to the needs of minority students. The new program led to a significant increase in minority student scores on standardized tests, above the national norm. The school system, under the leadership of a new superintendent, aggressively sought private sector participation in shaping a successful school desegregation program while preparing students for the world of work -- a role which the private sector was eager to assume.

The Advisory Council for Business and Industry of the Prince George's County Public School system channels business assistance and resources into a variety of programs, ranging from improving the image of the school system, to recruiting a quality instructional force, to coordinating business involvement in a wide range of academic and career-oriented programs for students and teachers alike.

The Prince George's County Private Industry Council (PIC) works in partnership with the school system to ensure that young people graduating from high school make a successful transition to the workplace. An employer committee and PIC staff work with school personnel to match graduates with available jobs. The business community sees this as an invaluable service in light of the serious labor shortages the area is experiencing.

Prince George's County's efforts are exemplary for the extent to which the business community has worked with the school system to design and implement a creative program of improvements. Launched in 1985 as "the school system of choices," this program includes:

- An enriched magnet school program for gifted and talented students, as part of the desegregation effort;
- A new program of workplace schools located near employment centers offering care to the children of working parents;

- The provision of additional teachers, equipment and educational aids for minority schools located in areas where transportation to more integrated schools was impractical.

This comprehensive program, carried out by an imaginative superintendent and supported by the strong local business-education partnership, has earned Prince George's County Public Schools national recognition as a role model for American public schools.

The County's business-education partnership is constantly taking on new challenges. The PIC and public school system are about to kick off a new initiative designed to provide comprehensive, year-round services to at-risk youth. Funded with federal, state and local resources, the goal of the program is to reduce the number of young people who drop out of school. This initiative, called "Success," will serve 3,000 students over a five-year period. This program offers the County hope as it looks to the year 2000.

Surge in Economic Growth

In the 1980s, Prince George's County began a dramatic economic upswing. By 1987, the County was in the midst of a period of significant economic growth and development, with a high potential for continued expansion. In 1986, increases were reported in practically all sectors, many at record levels. Residential construction activity was at its highest level in two decades; resident employment reported its largest increase ever; construction began on over 1.8 million square feet of commercial space; new home sales rose 33 percent; and private employment increased by nearly seven percent. At the same time, the County's unemployment rate -- at approximately three percent -- has remained well below the state and national averages.

A Revitalized School System

The Prince George's County Public School system is the 14th largest in the country. The school system's enrollment shifted from 80 percent white in 1970 to over 60 percent black in 1988. This dramatic shift in enrollment, as well as a school desegregation mandate, caused Prince George's County to face formidable obstacles to improving the quality of its public education. To meet this challenge, the school system, the community, and business and industry formed a partnership in the mid-1980s which laid the foundation for a revitalized school system.

Superintendent Murphy implemented an action plan consisting of five major points:

1) Lay out all the problems and stop making excuses for the failures of the public schools;
2) Get the community to take ownership of the school system;
3) Establish a foundation of trust;
4) Begin a process of incremental change; and
5) Create a revolution.

Students With Warranties

Prince George's County is in the process of initiating a guaranteed certificate program, in effect, a warranty on the quality of its graduates. "General Motors gives a warranty on its cars. Home builders give warranties on their homes. We must give warranties on our products, too," says Superintendent Murphy. The schools asked the business community to identify all of the skills that they need in their entry level workers. The Advisory

Council for Business and Industry established a Career Education Task Force to identify the employability skills business needs, to review the current career education curriculum and develop proposals to expand its effectiveness, and to develop programs to better inform teachers of the skills needed. The Task Force issued a report in March 1987 with a number of recommendations on employability skills, monitoring, student programs, and teacher programs.

The schools will ensure that these skills are included in the instructional program as these youngsters go through high school. Each student will be tested on these skills, and, if they pass, they will be given a guarantee certificate along with their diploma. When they apply to employers for a job, their certificate guarantees that they have the skills specified by business. During the first year on the job, if the youngsters do not demonstrate these skills, the schools will take them back, educate them and retrain them, at no cost to the employers.

Creative Teacher Recruitment

In 1985, Superintendent Murphy was faced with a need to hire 600 teachers from an applicant pool of less than one thousand. "With these numbers," he said, "the test for employment would be 'can you breathe -- if you can breathe, we will give you a contract to work in the school system'." The Superintendent asked business for help in recruiting a quality instructional force for the school system. Business came back with a plan. James O. Harmon, Vice President of Litton Industries-Amecom Division, said, "The problem with you people in education is that you don't use any of the strategies that we use in the competitive business world. We not only have to be competitive salary-wise, we have to give perks."

So business assembled a package of fringe benefits. Realtors donated a month's free rent and no security deposit. Lawyers donated free legal services. Movers donated discounted services. Banks donated free safe deposit boxes and bank credit cards with no service fee. Restaurants gave ten percent discounts on all meals. Car dealers offered discounts on auto loans.

While the rest of the nation struggles with severe shortages of teachers, Prince George's County has an abundance of qualified applicants. Over 4,000 teachers applied for 400 vacancies in 1986. Because of joint efforts between the Advisory Council and the schools, teachers' starting salaries have increased from the lowest to among the highest in the state of Maryland, and above those of many other states.

Thirty-five percent of the new teachers hired for the 1987-88 school year are black, which enables the Council to reach its goal of increasing the number of black recruits from 28 percent in 1986 to 35 percent in 1987-88. The Teacher Recruitment Committee of the Council is now planning activities to maintain a large pool of applicants so that the school system can employ "the best and the brightest" and raise the percentage of minority recruits from 35 percent to 45 percent.

Turning Their Image Around

Dr. Murphy also asked the business community to help make the community aware of the good things that were happening in the schools. Many of the image problems were based on negative

perceptions, not reality. Business developed a plan to sell the products of the Prince George's County Public Schools through aggressive advertising. Their scheme was to find some outstanding examples of students in the school system, and let the community know, via television, what these youngsters were doing. They created a series of TV ads, ran them in prime time, each playing on "double entendre" -- taking a negative impression and turning it into a success story.

The first ad showed a close-up of student Jane McCabe, staring into space, with a voiceover saying, "Jane McCabe has a drug problem in the Prince George's County Public Schools." Then the camera panned back and focused on test tubes and laboratory equipment around Jane, and the voice said, "You would, too, if Searle's Pharmaceutical had given you a $600,000 grant to study the effect of drugs in space. Jane McCabe and the Prince George's County Public Schools -- a lot of people think they've got a great future."

The next ad showed Willis Pinckney, a young black man, with his back to the camera, writing on the wall. It said, "Willis Pinckney's name is all over the walls of the Prince George's County Public Schools." Immediately, one conjures up graffiti. Then the camera pans back showing a beautiful piece of art, with a voice saying, "It is also all over the Corcoran Art Gallery in Washington. Willis Pinckney and the Prince George's County Public Schools -- a lot of people think they've got a great future."

Business developed the ideas, donated the advertisements, and raised the money to air them on prime time television. This not only built community pride, but developed pride in the teachers and principals as well.

Multi-Level Business-Education Initiatives

Building on what was already a strong business interest in and long-term commitment to quality education, school officials initiated the Advisory Council for Business and Industry in 1984. With a membership that includes executives from leading businesses and industries, law firms, banking and financial institutions, computer and technology corporations, and the scientific and educational fields, the Council's goals include:

- Strengthening the school system's curriculum;
- Enhancing staff development for teachers and administrators;
- Motivating and preparing students for successful employment; and
- Assisting in public relations and marketing to enhance the image of public education.

The Council promoted business participation in the school system through activities such as the following:

Partners in Education. Approximately 40 businesses are participating in the Partners in Education program for the 1987-88 school year, joining with individual schools for purposes defined in written partnership agreements. For example:

- **Maryland Natural Gas** recently entered into a long-range partnership with Martin Luther King Middle School. The partnership includes opportunities for students and staff to take advantage of a wide variety of experiences including mentors, tutors, contests, field trips and lectures designed to complement the school curriculum.

- Spurred by a desperate shortage of sheet metal workers despite a high starting wage, **General Heating and Engineering Company** joined with the Jesse J. Warr Vocational Center at Suitland High School. Company officials are working with the school to design a strategy to encourage students to train for careers as sheet metal workers. The company assists with training, donates equipment, and works with the school's staff to develop their skills.

- The **banking industry** requested help in filling what are estimated to be 1,000 vacant teller positions county-wide. Five banks are working with Northwestern High School to develop a program that will educate business education students about teller training as a starting point for a career in banking. The banks will provide internships and jobs for the students, and bank employees will teach a course at the school.

- In a partnership with 47 schools, the **Shakey's Pizza** franchisee in Prince George's County devotes his entire advertising budget to school-related activities such as certificates for all students who are promoted in school and student bus trips to libraries.

Summer Employment Program. New teachers are not the only ones who benefit from business support. Complementing the teacher recruitment program is a summer employment program for veteran teachers, in which the business community provides part-time temporary summer employment for these teachers. This summer employment program helps the school system retain its experienced teachers while enhancing their classroom skills and expanding their awareness of other workplace requirements.

Science and Technology Institute. The Advisory Council's Science and Technology Committee plans an annual program to enhance the skills of science and technology teachers. During this one-week institute, teachers will spend time on-site in businesses and research centers, learning about state-of-the-art techniques and equipment in various work settings.

Following The Effective Schools Model

Following recommendations made by the Advisory Council for Business and Industry's Career Education Task Force, Prince George's County Public Schools have implemented a number of other critical education improvement efforts. These improvements give principals greater responsibility and make them more accountable, and develop them through the Prince George's County Leadership Training Program one day each month, and during a summer retreat known as "Camp Murphy." Teachers' performance is measured through student tests at every grade level and at every discipline to measure the growth for every youngster in every classroom.

The school system is linking the home and the school through home computers to provide parents daily report cards on their children's progress. The magnet school program is reputed to be one of the finest in the nation, enticing 3,000 young people back from private schools in 1987. The school system has developed a special program for at-risk youngsters in six high schools, which gives them access to a computer lab, enriched experiences, smaller teacher-pupil ratios, and other special services.

"We have found that we can take these at-risk youngsters who would have been

dropouts, deliver services different from the traditional high school model, and turn them around. They now have an academic success rate of 75 percent. If we can turn them around in the schools, they are not going to be getting welfare checks, they're not going to jail, and they're not going to become a burden on society -- they're going to become productive, tax-paying citizens," said Superintendent Murphy.

Measurable Achievements

Working with a budget that increased from $349 million to $426 million between 1986 and 1988, the Prince George's County Public School system has achieved rapid improvement in elementary and middle school scores on the California Achievement Test. Their goal was to move the entire school system into the top quartile and eliminate the gap between the performance of blacks and whites.

Prior to the establishment of the comprehensive education programs in 1985, minority students' test scores had been significantly below the national norm. In 1984, the Prince George's County Public School system was functioning academically at about the 50th percentile for all measured grades -- grades three, five and eight. The system was also failing state functional examinations for graduation. In 1984, only 40 percent of the county's young blacks passed the comprehensive writing examination.

Recent results for the 1988 California Achievement Tests show that all County third graders scored at the 73rd percentile and black third graders scored at the 68th percentile. The 5th graders moved to the 70th percentile, and 8th graders to the 69th percentile. In 1988, over 89 percent of the County's black youngsters passed the state functional writing examination, exceeding the state average for blacks and whites which was at 82 percent.

A Partnership Plan for the Future

In 1986, Superintendent Murphy challenged the Advisory Council for Business and Industry to evaluate the employability skills of the school system's graduates. The Advisory Council assembled business representatives to review the school system's Career Education program and to develop recommendations to "help the school system ensure that every one of its graduates has basic employability skills to succeed in the world of work." The Career Education Task Force, co-chaired by a former county executive turned businessman and the associate superintendent of education, accomplished its mission with the help of 24 business representatives on three subcommittees. The Task Force's March 1987 report included the following recommendations concerned with employability skills:

- Upon graduation, every student should demonstrate proficiency in identified employability skills;
- The school should infuse career education programs throughout every grade level;
- Each school should have a fully staffed, fully equipped career center;
- "Vocational" programs should be retitled to remove the stigma of second-class education; and
- Certificates should be provided noting mastery of employability skills to all

high school students who succeed in career education programs.

The Task Force also recommended that a monitoring system be established to ensure skill mastery by all students, to survey businesses to assess the quality of recent graduates, and to provide continuing services for students who do not demonstrate basic skills in the workplace. Also suggested were additional career education for students and course work on economic development for teachers.

To strengthen the business-education partnership, the Task Force called for the establishment of a Round Table discussion program for businesses and teachers, and a more active role in career education programs on the part of individual business volunteers.

Prince George's Vital Statistics

Total Population:	696,475	(1988)
Principal Industries/Businesses: Goddard Space Flight Center, Andrews Air Force Base, The University of Maryland, Computer Science Corporation, Giant Food, Litton Amecom, Digital Equipment.		
Employment Trends: Federal, state, and local government employs 27 percent of the county's workers; 73 percent work for the private sector. There has been recent growth in nearly all sectors of the economy, especially high technology, manufacturing, tourism, foreign trade, retailing, food, and finance; and, more than 20,000 new workers and a seven percent increase in private sector employment in 1986. Black-owned businesses continue to expand as a result of the Economic Development Corporation's emphasis on developing support for small and minority-owned companies.		
Unemployment Rates:		
Total:	3.5%	(1987)
Youth:	N.A.	
Minority Youth:	N.A.	
School Population:	103,325	
White:	31.0%	
Black:	62.2%	
Hispanic:	2.3%	
Other:	6.4%	
Total Number of Schools:	175	(1986)
Dropout Rate:	4.42%	(1987)
School Budget:	$426 million	(Feb. 1988)
Per Pupil Expenditure:	$4,100	
Teacher/Pupil Ratio:		
Elementary:	1:26.4	
Junior/Middle:	1:24.8	
Senior:	1:25.0	
Enrollment Trends: 1987-88 enrollment is the highest in three years, reversing a 15-year trend of decreasing enrollments; the increase is due in part to former private and parochial students shifting back into the public school system.		

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Cincinnati, Ohio

"Unless something is done, hundreds of children born this year in Cincinnati will grow up functionally illiterate and unemployable. Almost half will never finish high school. We must work together to stop this enormous waste of human potential in our community."

John Pepper, President
The Procter & Gamble Company

A History of Corporate Leadership

Cincinnati is home to several Fortune 500 companies. These companies contribute to the city's strong private sector leadership, which has a long-standing commitment to improvement in education. One of Cincinnati's early partnerships between business and education was the Cincinnati Business Committee (CBC), formed in 1977 by CEOs of the city's major businesses, to among other things, channel business expertise into Cincinnati schools.

Within two years, CBC had moved to sponsor the establishment of Partners in Education, a district-wide compact between the school system, CBC, and the Greater Cincinnati Chamber of Commerce. Partners in Education links schools with private sector partners to improve student achievement through programs that include financial aid, tutoring, career education, and work experience.

When the Cincinnati Private Industry Council (PIC) was established in 1978, representatives of CBC companies, were among the PIC members. In 1982, CBC joined other community leaders in establishing Jobs for Cincinnati Graduates to help high school seniors stay in school and compete effectively in the job market after graduation.

In 1980, CBC lent its support to a grass roots, community-based effort in support of a Cincinnati school tax levy -- resulting in the first voter approved tax levy in Cincinnati in over ten years. Since that time, local business has continued to support grass roots community efforts and three additional school tax levies have been successfully passed.

Developing the Cincinnati Youth Collaborative

Although the Cincinnati Business Committee achieved notable successes, it did not specifically focus its efforts on reducing the school system's high dropout rate. In 1986, several forces came together that led to the establishment of the Cincinnati Youth Collaborative, a partnership organization aimed specifically at dropout prevention. Key factors that set the stage for the Collaborative included the following:

- The chair of the Cincinnati and Hamilton County PIC began examining the Boston Compact to determine whether that approach could help Cincinnati improve local labor force quality through dropout prevention. "The number of youths

dropping out was far greater than the number going into the workforce," the PIC Chair observed.

- The Ford Foundation granted $25,000 to the public school system to establish a community organization to study the dropout problem and develop a dropout prevention plan.

- Procter & Gamble President John Pepper became personally interested in dropout prevention strategies and began developing an action plan for Cincinnati.

In January 1987, the Cincinnati Youth Collaborative was established. Co-chaired by John Pepper, School Superintendent Lee Etta Powell, and City Council Member J. Kenneth Blackwell and directed by a 30-member steering committee of business and community leaders, the Collaborative links hundreds of business volunteers with scores of public and private sector organizations concerned with youth.

Shifting Economy

Cincinnati's economy, while healthy, is shifting from an industrial focus to high tech services. Employment is concentrated in wholesale and retail trade (25.1 percent), and the service sector (24.9 percent), while manufacturing now accounts for only 21.5 percent. In 1987, the Cincinnati area gained 15,000 new jobs, with a similar gain projected for 1988. Young people, however, are realizing only limited benefit from this job growth. The 15 percent overall youth unemployment rate and the 50 percent minority youth unemployment rate stand in sharp contrast to the 5.5 percent unemployment rate for the city as a whole. Opening job opportunities to youth is a high priority.

Creating Greater Opportunity

Cincinnati schools have had difficulty preparing their students for the work world, as evidenced by the Cincinnati City School District's 40 percent dropout rate. The 1987-88 school system budget of $210 million serves 52,000 children. Despite a per pupil expenditure of $4,038, significantly above the national average, educators and business leaders alike realized that outside help was needed to keep potential dropouts in school and to equip students for productive futures. "The school system on its own cannot supply all the needs a child comes to us with," admitted School Superintendent Powell.

According to Tom Mooney, president of the Cincinnati Federation of Teachers, the dropout problem is directly related to student motivation, which is undermined by many factors in Cincinnati's inner-city schools, especially the lack of opportunity. "As a teacher, you can stand on your head and talk about the importance of getting an education. But the reality for these kids is that the odds are against them." Cincinnati's strong community partnership is beginning to change those odds.

A Strong, Well-Planned Collaborative Effort

The Collaborative has developed a detailed plan for achieving its targeted objectives -- reducing the numbers of dropouts, increasing the number of youth entering the job market, increasing the number of students attending college, increasing the number of children involved in early childhood education programs, and improving the overall effectiveness of the instructional program. The Collaborative's comprehensive plan is significant

because it operates on several levels: 1) business helping graduates find jobs or go on to higher education; 2) business providing resources for the schools, both financial and volunteer; and, most importantly; 3) business helping achieve institutional improvements. The Collaborative's agenda is a complex one, beginning with a series of three-year pilot projects that include:

- Taft High School District Project -- provides counseling, mentoring, tutoring, staff development, instructional changes, and community resource coordination;
- A pre-school demonstration project in two elementary schools;
- Leadership Training -- aimed at in-service training of educational leaders from administrative and teacher ranks;
- Instructional Improvement -- aimed at improving the academic performance of students;
- Bridges to Jobs -- provides jobs and a job network; and
- Bridges to College -- an information clearance center for higher education and a system of financial incentives for college education.

The Taft Project. The Cincinnati Youth Collaborative is providing intensive assistance for Taft High School -- the Cincinnati high school with the highest percentage of dropouts -- and at Taft's lower and middle feeder schools, with improved counseling, mentoring, tutoring, smaller classes, and jobs programs. Volunteers have helped reorganize the schools so that teams of teachers work with the same group of students throughout the day. Two new positions have been created: a resource coordinator to serve as the central point of contact between the principal, teacher, student, and all outside agencies involved in the project; and a counselor at Taft who is responsible solely for college-related issues. An enrichment program called Club Ed-Venture rewards students for good attendance and performance. Summers will bring in-service training for teachers and a summer school/summer jobs program for at-risk students.

The Taft project coordinator will monitor progress quarterly. "Our goal over the next two years is to reduce the yearly dropout rate at Taft from 17 percent to ten percent. At the two middle schools, we want to reduce the rate from the current level of ten percent to two percent. And on the California Achievement Test, we want to raise the number of Taft kids who score at or above national norms from 15 percent to 30 percent," according to the project coordinator.

Pre-School Program. One of the Collaborative's most ambitious and long range strategies is the establishment of a public school/private sector pilot pre-school program for three-year-olds at two elementary schools. Supervised by the University of Cincinnati and financed by business, the program will prepare inner-city children for kindergarten by developing appropriate basic skills, and will nurture the children's academic and social skills throughout their elementary and secondary school careers. Sister Jean Patrice Harrington, the Collaborative's Executive Director, looks to the year 2002 -- when the three-year-olds are scheduled to complete high school -- as the real measure of success for the pre-school program. "Our goal is to see 100 percent of these children graduate from high school," she said.

Leadership Training. Cincinnati plans to provide leadership development training for teachers and administrators in selected junior and senior high schools with high dropout rates. The training will be designed to strengthen their skills in working with "high-risk" students.

Instructional Improvement. The Collaborative will seek to improve the instructional delivery system, increase guidance services, increase instructional support, improve staff development activities, and increase parent and community involvement. The Collaborative's plans include the use of computer assisted instruction, interdisciplinary teaming, related instructional strategies, a reduced counselor-student ratio, and increased support services. Their goal is to more effectively address teen pregnancy, low achievement, low self-esteem, lack of success, lack of learning skills, and lack of parental encouragement.

A subcommittee of the Cincinnati Youth Collaborative, chaired by Superintendent Powell, is also reviewing and modifying the public school curriculum by developing a sequential K-12 reading program, a sequential K-12 mathematics program, and a revised English Composition program. It is reviewing and redesigning the vocational education program, and establishing a competency-based educational program to address acquisition of basic skills.

The Collaborative has developed a detailed 63-page plan for dropout prevention, based upon findings from an extensive investigation which included analysis of existing statistics of the Cincinnati Public Schools, an interview study of 420 dropouts, a comparison of the characteristics of dropouts and students who remain in school, and informal investigations. Their plan includes a review of existing data, indicators, school policies and procedures, existing resources, intervention strategies and approaches, and the potential role of the Collaborative.

Bridges to Jobs. Under the direction of the Collaborative, the Private Industry Council (PIC) of Cincinnati and Hamilton County organized a Jobs Network, which coordinates the work of job-providing organizations to offer better access to employment to the growing pool of graduates. Bridges To Jobs links the youth employment services of the school system, Cincinnati's Citizens Committee on Youth, Jobs for Cincinnati Graduates, and the YES program sponsored by the Chamber of Commerce. It uses the "Boston Compact" approach of seeking priority hiring from local firms for high school graduates if the schools succeed in increasing achievement and job readiness levels.

Higher Education Aid. To help interested high school graduates go on to post-secondary education, the Collaborative is creating an endowment that will provide "last resort" financing for college to qualified needy students. Higher Education Information Centers which will serve as clearinghouses on financial aid programs and post-secondary institutions are being developed.

Coordinating Community Resources

"An important goal of all our programs is to make better employees of our youth," according to Sister Jean. "We will draw up a list of the basic requirements employers seek. We know they are not as interested in technical skills as they are in one's command of the basics and the ability to relate with other people. When the list is compiled, it will be incorporated

into the curriculum, K-12." The pilot projects will yield other valuable data as well, which the Cincinnati Collaborative will use to refine the approach and to develop a permanent funding strategy, prior to establishing the projects throughout the school system.

The cost of the pilot projects will be covered in part by reallocating existing community resources and in part by funds raised by the Collaborative. The pilot phase will need an additional $2 million per year, which the Collaborative will provide through a fundraising campaign.

One of Cincinnati's priorities for 1988-89 is to implement fully their networking of community agencies and organizations that serve youth, as well as activating hundreds of volunteers in the community who wish to serve as mentors, tutors, role models, work with parents, or support divisions of the Collaborative in a number of ways.

For example, the President of the Community Chest, the City Manager, and the Director of Hamilton County Welfare Services have been added to the Steering Committee in order to focus the work of all organizations in the community in assisting the Collaborative in achieving its vision. The mobilization of parents, church groups, and all interested Cincinnatians is part of the Collaborative's goals, all united to serve Cincinnati's youth. "Looking at the primary resources in our community -- the schools, business, and the community at large, it is clear that the schools are not the only ones responsible, nor should the finger be pointed at them," said Sister Jean.

Community-Wide Support

Cincinnati is in the midst of implementing many of these new initiatives. Their strength is their overwhelming community support among existing youth serving organizations and citizens concerned about their youth. The Collaborative seeks to improve coordination, eliminate duplication and encourage cooperation. In the words of Superintendent Powell, "Cincinnati will meet this challenge through the commitment and cooperation of all segments of the community. The Cincinnati Youth Collaborative will lead the way with creative new ideas and ambitious goals, but it is up to each of us to get involved, to be 'United For Youth,' to help prepare our youngsters for tomorrow."

Cincinnati Vital Statistics

Total Population: 370,000 (1986 city population)
Principal Industries/Businesses: Wholesale and retail trade (25.2 percent), service sector (24.9 percent), manufacturing (21.5 percent). Shifting from industrial center to high tech.
Employment Trends: Community gained 15,000 new jobs in 1987, with similar gains expected in 1988.
Unemployment Rates:

Total:	5.5%
Youth:	15.0%
Minority Youth:	50.0%
School Population:	52,000 (city public school district only)
White:	38.0%
Black:	60.0%
Other:	2.0%
Total Number of Schools:	82
Dropout Rate:	40.0%
School Budget:	$210 million
Per Pupil Expenditure:	Approx. $4,038
Teacher/Pupil Ratio:	1:18

Enrollment Trends: Alternative school enrollment at 15,000 and growing.

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Portland, Oregon

"When we talk of business being involved with youth unemployment, we aren't just after dollars of business support. We aren't just after people who will act as mentors or as speakers or as trainers....We also are after business providing job opportunities for the youth. It's one thing to keep them in school and provide them with a more work-oriented curriculum, but we also have to give them on-the-job experience."

Roger Breezley
Chairman, Business/Youth Exchange
Chairman and CEO, U.S. Bancorp

A High Yield Investment

The Portland Investment is a unique strategy designed to reduce youth unemployment and improve the quality of young labor force entrants in Portland and surrounding Multnomah County through a comprehensive continuum of services based on early identification of risk and early preventative intervention. It involves an extraordinary degree of commitment on the part of the business community, the local governments, public and higher education, organized labor, and community organizations -- all of which are represented as signatories to the Leaders Roundtable Master Agreement to implement the Portland Investment plan. Through that agreement, each participating entity commits to ensure the successful implementation of the ten-year plan through joint advocacy and through contributions of staff and other resources. The Portland Investment is the culmination of a tradition of business-education partnerships, and incorporates some of the products of those earlier partnerships into its unified strategy.

The Leaders Roundtable could not have developed the Portland Investment as a coordinative strategy without being able to build on the history of business-education cooperation and extensive youth programs that already existed in Portland.

- **The Business/Youth Exchange** of the Portland Chamber of Commerce grew out of the economic downturn in 1983 that made employers reluctant to accept summer youth as employees. Faced with business difficulties, employers were no longer willing to participate in youth programs simply as a public service. In response to this dissatisfaction, the business leaders developed the Exchange to help the Private Industry Council and the school system operate a summer youth program that would be more responsive to business needs. The Exchange is funded by 75 companies and brokers services of over 600 business people from nearly 300 companies. Its chair, Roger Breezley, Chairman and CEO, U.S. Bancorp, was a key individual in founding the Leaders Roundtable. The Exchange has also played a role in obtaining the initial funding for most of the Portland Investment programs listed below.

- **The Portland Private Industry Council**, serving Portland, Multnomah County, and Washington

County, is the single largest source of funding for programs serving at-risk youth in the Portland area, and is a committed partner of the Leaders Roundtable. A new initiative that exemplifies the PIC's close involvement with youth and education is a program aimed at curbing the development of juvenile gangs. The PIC developed these programs at the request of the Mayor's Office. Base funding is from city resources. The Portland School District provides additional funding and the PIC administers the program in the community.

- The **Portland Urban Network Project** was initiated in 1983 as a joint effort among the Business/Youth Exchange, the PIC, the school system, and other business and community organizations to generate increased school/business/government collaboration in the design and delivery of dropout prevention and youth employment preparation programs. The Portland Urban Network Project phased into the Leaders Roundtable in 1984.

Higher Skill Levels Required

Portland is the third largest port on the west coast for waterborne commerce, and has close ties with Asia's Pacific Rim Nations. Electronics is a major industry in Portland and is experiencing rapid job growth. Heavy manufacturing companies are also important, including Boeing Aircraft, Freightliner (diesel trucks), Intel, James River Corporation, Tektronix, Precision Castparts and Northwest Marine Iron Works (ship works). Other major industries are financial services, transportation, health care, education, electric power, telecommunications, and retail trade.

Although Portland's economy is recovering from the depressed state brought on by layoffs and shutdowns in the lumber and forest products industries in the early 1980s, poor people and minorities still find it difficult to enter the primary labor market. The April 1988 raw unemployment rate for the Portland metropolitan area was 4.8 percent -- the lowest rate since 1961 and down from a high of 11.5 percent in 1983. Future employment opportunities will be concentrated in the service sector, with an emphasis on retail sales, health care, and janitorial services.

Private sector recruiters report difficulty in hiring entry level staff with adequate skills. At Pacific Northwest Bell, for example, the manager of employment programs finds that "of the people who come in and apply for the entry level operator position, about 25 percent are failing the test, unable even to get to the second step of an interview." One key issue is the higher skill levels required for even entry level jobs. According to a First Interstate Bank employment officer, "Generally, people expect banks to have many positions that require numeric and alpha filing. The truth is that few positions require that anymore, because these tasks are automated."

Business Responds to Improve Skills

In 1986 and 1987, the Portland public school system saw its first significant rise in enrollment since the 1969-70 school year. For the 1987-88 school year, 52,996 students enrolled -- up 2.2 percent from the year before. Over one-quarter of the students are minorities, primarily blacks (15.4 percent) and Asians (7.4 percent).

Education issues which spurred the business community to action in 1983 were the unacceptably high dropout rate

(over 25 percent, with a higher rate among minority students), and the youth unemployment rate (22 percent for the total youth population, 40 percent for minority youth, and over 50 percent for black youth).

The business response is based in large part on the perceived need for higher skill level and work readiness among entry level applicants. An Omark Industries employment coordinator, who had little trouble hiring qualified manufacturing workers as recently as 1987, remarked on a pronounced change by the spring of 1988: "We want to see people who can think and work well in a team atmosphere, and really get in there and go, and we're not seeing that. We really want to be seeing much stronger educational skills and mechanical aptitude, or at least the math skills, and they're just not there."

Partnership Approach -- The Portland Investment

The Portland Investment is the centerpiece of the strategy developed by Portland and surrounding Multnomah County to address the needs of at-risk youth. It is a master plan to consolidate the fragmented youth employment programs, stimulate private sector involvement in schools in order to reduce school dropouts, provide increased employability skills and provide increased access to jobs, especially for low-income and minority youth. Initiated in 1986, it includes a continuum of assistance that can help at-risk youth, prenatal to age 21, to overcome the barriers to school completion and employment. The continuum links education, personal support services, and training to the needs of the individual child, young person, and family.

"The Portland Investment is a plan for intervention," explained Vern Ryles, former Chair of the Portland Private Industry Council (PIC), "a plan that brings the community resources together and focuses on the youth's problem at the earliest possible age. The Portland Investment is a combination of education, the private sector, social services, the juvenile justice system, and most of the institutions that provide services for youth in our community."

This comprehensive effort grew from the conviction of several community leaders, including the Business/Youth Exchange Chairman Roger Breezley, Chairman, U.S. Bancorp, the Mayor, and Portland's School Superintendent, that a broad effort was necessary to improve long-term job opportunities for disadvantaged youth, to improve employment preparation, and to improve coordination and accountability among programs. That conviction led to the founding of the Leaders Roundtable in 1984. The Roundtable's initial membership included political, business and educational leaders, and was joined by organized labor, the Portland School Board, Portland Community College, and others with major policy making and funding influence over youth employment programs. The goal of the Portland Investment is to effect long-term structural change that will:

- Reduce the number of school dropouts;
- Enhance basic skills;
- Provide increased access to jobs especially for low income and minority youths.

The Portland Investment represents the Leaders Roundtable's ten-year strategy to accomplish those objectives. It calls for modifying the many existing Portland youth programs as necessary and integrating them into a comprehensive

continuum of programs to bring at-risk youth into the city's economic and social mainstream. Where gaps exist, new programs will be developed. This unified approach emphasizes prevention of youth problems based on early intervention.

The Roundtable developed its preventive approach through four task forces concerned with the needs of children and youth: 1) prenatal through grade five, 2) middle school, 3) high school, and 4) out of school, ages 14-21. The Roundtable identified many of the barriers to eventual employment that a young person may face -- from the prenatal stage through age 21. These included substandard basic skills, low self esteem, vocational skill deficits, young parenthood, and employer bias, among others. The Portland Investment's programs are intended to intervene at each age -- with preventive strategies for the younger children and remedial approaches for the older ones -- and to address each barrier as needed. All programs combine academic preparation or remediation, employability skills training and support services. Most students receive these services within the context of multi-year programs that operate year-round.

As eligible youth progress through Portland Investment programs, many obtain increasingly responsible work experience positions. Career preparation begins in middle school with subsidized public sector employment for 14- and 15-year-olds and progresses to paid unsubsidized private sector work experience prior to high school graduation.

By the time the youth in Portland Investment programs graduate from high school, they are expected to be ready for primary labor market jobs, and the Leaders Roundtable guarantees that those jobs will be available. The progression through middle school work experience to full-time employment after graduation is used as a way to show at-risk youth that "playing by the rules" leads to more than just a minimum wage job. Graduates carry both a high school diploma or GED and an additional diploma that certifies workplace readiness.

The programs described below are among those the Portland Investment includes in its "ladder" of programs to introduce in-school, at-risk students to the world of work and help them to set life goals, beginning in eighth grade and continuing through high school.

Financial Services Academy. The Urban Network Project joined with the Portland Urban League to establish the Financial Services Academy, a three-year program preparing students for entry level positions in the financial field. Operating at a local high school, the Financial Services Academy provides a specialized curriculum, intensive basic skills development, job sampling opportunities, paid work experience, business community mentors, and pre-employment skills training. Results to date are significantly decreased dropout rates for students in the program, substantial increases in grades, and a steady rise in attendance and test scores.

Summer Training and Education Program (STEP). Since 1985, Portland has been a site for this demonstration program which draws its primary funding from the PIC and Portland Public Schools. The program works to reduce summer learning losses among at-risk youth through a combination of education, work experience, and personal counseling with an emphasis on life skills. The personal counseling is designed in part to prevent teen

pregnancies. STEP also offers year-round support services to interested participants.

STEP serves 14- and 15-year-olds from low-income families. Eligible youth are those who have tested from one to four years below grade level in reading and mathematics. Participants receive 90 hours of group and individual instruction in basic reading and math skills, and 110 hours of work experience through the city's summer youth employment program.

When the STEP demonstration concludes in 1988, the PIC and the Portland school system will continue the basic program in the city's schools. Results have been positive; participants out-performed a control group of nonparticipants, testing over half a year higher in reading and over three-fourths of a year higher in math. They were also less likely to fail in school, and, if sexually active, were more likely to use contraception. In the 1986-87 school year, over 80 percent of participants maintained 2.0 GPAs or better.

BRIDGE. This pilot program is supported by the Oregon State Youth Coordinating Council, and provides services year-round to students too young for the STEP program. Its goal is to help disadvantaged youth establish the patterns of personal and academic success that lead to graduation and employability.

BRIDGE operates at Grant High School (Portland's model school of effective teaching strategies that decrease the dropout rate) as well as at two middle schools that feed into Grant. It targets young people who are between one and four grades behind in reading or math or who face other barriers to employability or academic success. Most participants are minorities. BRIDGE assesses eighth graders to determine who needs its services, and then runs special classes for ninth and tenth graders that stress the connections between school and work, provide basic skills enrichment, motivate them to stay in school, and help them set personal and academic goals. BRIDGE students participate in STEP during summers. First semester results show that 45 percent of students were able to improve their GPAs.

Comprehensive Summer Youth Employment Program (CSYEP). This cooperative summer youth program involves the Private Industry Council, the school system, and the local government, as well as the STEP program. Portland Mayor Bud Clark, a founder and strong supporter of the Portland Investment, consolidated funding from a variety of city agencies to supplement the PIC's Job Training Partnership Act (JTPA) resources, resulting in a combination work experience/remedial education program serving over 2,000 young people annually. CSYEP is specially designed to work well with STEP and other local education and employment programs. For example, the program schedules work assignments in coordination with the school district's summer school classes so that youth who need to improve basic skills can attend classes. For its part, the School Board expanded the number of basic skills classes offered in the summer and waived summer school tuition for low-income youth.

CSYEP results to date can be measured in part by employers' reactions to youth employees. In Summer 1987, 251 youths were placed in unsubsidized employment in the private sector. Employers participating for the first time expressed a high degree of satisfaction with youth

placed at their businesses. Three fourths of employers would hire again through the program; over two thirds rated youth as "good" or "excellent" on preparation for job responsibilities and quality of work.

Partnership Project. This school-to-work transition program is aimed at 11th and 12th grade students who have a grade point average at or near 2.0, are economically disadvantaged, and have demonstrated some ability to attend school. The program focuses on upgrading basic skills, providing work experience before graduation, and increasing self-esteem. It includes competency-based pre-employment training, life skills, classes in applied math and English, part-time paid work experience in the private sector during the school year, summer work experience, and job opportunities after graduation. The program also maintains contact with students for one year after graduation. At Grant High School, the June 1987 Partnership seniors had a 100 percent graduation rate compared to a 93 percent graduation rate for all Grant seniors. Out of 150 participants, to date, the overwhelming majority are working, working and attending school, or attending school only.

Youth Employment Institute. Portland also has an extensive system of education and training programs for out-of-school youth, operated through the Portland FIC. The Youth Employment Institute, established in 1985 by the PIC and the State Youth Coordinating Council, serves dropouts and other unemployed youth, and is a resource for many of the in-school education and employment programs. Results to date, from July through December 1987, show that of the youths who were enrolled in year-round programs, roughly half were placed in jobs, and one fifth earned GEDs.

Outside-In Pre-Employment Program. This program provides career exploration, work experience and training to homeless youth between the ages of 16 and 21 -- a particularly difficult group. Youth participate in formal Pre-Employment Training as well as practical work experience. All work experience includes staff supervision. Complementary services include case management, housing, mental health, medical, and various other support services.

Portland Investment Marketing Plan. In May 1988, Leaders Roundtable members approved a written commitment to insure job opportunities in the primary labor market for all graduates of Investment programs.

A marketing plan was developed and includes:

- A work readiness diploma;
- An organized publicity plan;
- Staged media events; and
- Special recognition to employers who hire a diploma-bearing graduate of a Portland Investment program.

Portland Vital Statistics

Total Population:	419,810	(1987)
Principal Industries/Businesses: Manufacturing holding steady; growth expected in non-manufacturing sector (services, trade, finance, insurance, real estate).		
Employment Trends: Non-manufacturing employment in the Portland Metropolitan Statistical Area is expected to account for most of the growth (+9,200 in 1989); manufacturing employment is expected to rise slightly (+700 in 1989).		
Unemployment Rates:		
Total:	5.6%	(Feb. 1988)
Youth:	22.0%	
Minority Youth:	40.0%	
School Population:	52,996	(1987)
White:	73.0%	
Black:	15.4%	
Hispanic:	2.2%	
Asian:	7.4%	
American Indian:	2.0%	
Total Number of Schools:	89	
Dropout Rate:	25%	
School Budget:	$285.8 million	
Per Pupil Expenditure:	Approx. $4,400	
Teacher/Pupil Ratio:		
Elementary:	1:25	
Middle and high school:	1:18.5	
Enrollment Trends: Declined every year since 1969-70; began to increase slightly in 1984-85; rose 2.2% between 1986-87 and 1987-88 school years.		

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Appendix D

Selected Bibliography

The Economy and the Workplace

American Society for Training and Development. *Basic Workplace Skills: Enhancing Employer Competitiveness*. San Francisco: Jossey-Bass Publishers (forthcoming 1989).

The American Society for Training and Development (ASTD) is currently in the second year of a Department of Labor funded project on "Best Practices: What Works in Training and Development." Four books and a "how to" manual will be published concerning such issues as the economic impact of training on productivity and competitiveness, measuring and evaluating training, and the role of basic workplace skills on the employer's bottom line.

Berlin, G., and Sum, A. *Toward A More Perfect Union: Basic Skills, Poor Families, and Our Economic Future*. Occasional Paper No. 3, Ford Foundation Project on Social Welfare and the American Future, 1988.

Maintains that the basic skills crisis is intertwined with problems of youth employment, dropouts, teenage pregnancy, welfare dependency, and the decline in workforce productivity growth. It also presents a conceptual framework for thinking about the problem, describes effective programs, identifies weaknesses in the nation's educational and training institutions, and suggests an agenda for future action.

Braden, P. V. "The Impact of Technology on the Work Force," *Community, Technical and Junior College Journal*, 24-29, Dec./Jan. 1987-88.

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Butler, O. B. "Why Johnny Can't Get a Job," *Fortune*, 163, Oct. 28, 1985.

States that important changes are needed in public education including the improvement of basic skills, greater emphasis on the ability to solve problems, higher standards for graduation, and the expansion of quality pre-kindergarten programs.

Doyle, D. P. "Business-Led School Reform: The Second Wave," *Across the Board*, 24-32, Nov. 1987.

Describes the relationship between business and schools from a historical perspective to the present. It argues that major education reform is needed and challenges business and schools to begin aggressively designing the school of the 21st century.

Ebersole, P. "Future Employees' Lack of Basic Skills Alarms Companies," *Rochester (NY) Democrat and Chronicle*, 1A, May 1, 1988.

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Calls attention to the approximately 20 million 16-24 year-olds who are not likely to embark upon undergraduate education. It argues that the primary problem lies with the economy rather than with the youths themselves. The report explores ways in which a wide range of community institutions, acting in concert with schools, can provide these youths with a better chance of adult self-sufficiency.

Functional Literacy and the Workplace. Washington, D.C.: Education Services, American Council of Life Insurance, (Undated).

Presents the proceedings of a National Invitational Conference called to bring leaders from business, education, labor and government together to discuss the multitude of issues surrounding the area of literacy and the workplace.

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Examines the results of a major study for the Carnegie Forum on Employment and Education. Discovers that educating the workforce, not lowering wages or introducing protectionist legislation, is what many Americans believe to be the solution to restoring competitiveness.

"Help Wanted: America Faces an Era of Worker Scarcity That May Last to the Year 2000," *Business Week*, 48-53, Aug. 10, 1987.

Discusses how employers are responding to the problems of worker scarcity and the widening mismatch between the skills workers have and the skills employers need.

"High Schools and the Changing Workplace: The Employers' View," *Report of the Panel on Secondary School Education for the Changing Workplace*, Washington D. C.: National Academy Press, 1984.

Examines the needs of high school graduates entering the labor force and employers' views of what these graduates will need to perform effectively in the workplace. It describes a set core of competencies that will equip young people for success in the labor market.

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Discusses major issues such as international competitiveness and changes in workforce productivity, and presents state strategies designed to address these issues.

Making America Work Again. The National Commission on Jobs and Small Business, 1987.

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Discusses the major trends shaping the U. S. economy into the year 2000. It presents three different scenarios for the U. S. economy in order to discuss the range of possible outcomes both in terms of the workforce and policy options. Lastly, six major issues that require rethinking and revision between now and the year 2000 are examined.

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Recommends a three-part strategy to improve the prospects for disadvantaged children including prevention through early intervention, restructuring the foundations of education, and targeted

retention and reentry programs. These strategies combine comprehensive educational, employment, health, and social services for both in-school youth and dropouts.

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Summarizes the results and recommendations of the Job Training and Retraining National Networking Conference.

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Contains recommendations for a second stage of education reform to sustain and extend the more promising features of the first stage and to correct its oversights and deficiencies.

Business-Education Partnerships

Countdown 2000: Michigan's Action Plan for a Competitive Workforce. Michigan: Adult Literacy Task Force, Mar. 1988.

Explores the reasons behind the skills gap, examines the extent of the skills challenge, identifies the participants and some problems in the state adult training and education system, presents a set of principles to guide improvements to the system and makes specific recommendations for action by the state.

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Examines how the Boston Compact's business and public education agreements fared during the period 1985-1987. It considers the business community's role in the Compact, the school department's progress toward improving the schools, and the perspective of people who worked in two of the city's high schools. Lastly, there is an analysis of the Boston Compact's accomplishments and its prospects for improving Boston's high schools.

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McMullan, B. J., and Snyder, P. *Allies in Education: Schools and Business Working Together for At-Risk Youth*. Vol. I, Philadelphia: Public/Private Ventures, Fall 1987.

Analyzes the school/business phenomenon as it is represented by the nine case studies presented in Volume II. It places partnerships in the historical framework of business/education collaborations; characterizes activities and interventions that collaborations have undertaken; describes the role of business; analyzes the effects on students, schools, business and educators; and discusses what light this might shed for future partnership efforts.

McMullan, B. J., et al. *Allies in Education: Schools and Business Working Together for At-Risk Youth*. Vol. II, Philadelphia: Public/Private Ventures, Sept. 1987.

Contains separate profiles of nine school/business collaboration efforts based on direct field studies of the programs conducted in 1985 and 1986. Each profile addresses four basic issues: what is the nature of the school/business collaborations; what types of youth are served; what role does business play in the collaborations; and how did business get involved.

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Snyder, P. and McMullan, B. J. *School/Business Collaboration Study: A Profile of Philadelphia High School Academies, Philadelphia, Pennsylvania*. Philadelphia: Public/Private Ventures, June 1987.

Examines the Philadelphia High School Academies. These are four-year vocational preparation programs that are a partnership effort of the Philadelphia Public Schools and business, labor, and community organizations.

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